



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

December 3, 2003

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: North Vernon Industry Corp. / SSM 079-17819-00018

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 9/16/03

Part 70 Significant Source Modification

OFFICE OF AIR QUALITY

North Vernon Industry Corporation 3750 North CR 75 West, North Vernon, IN 47265

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Source Modification No.: 079-17819-00018	
Issued by: Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: December 3, 2003

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SECTION A

SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permitted to obtain additional permits or seek modification of this approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary gray iron foundry.

Source Name:	North Vernon Industry Corporation
Source Location:	3750 North CR 75 West, North Vernon, IN 47265
Mailing Address:	P.O. Box 894, North Vernon, IN 47265
General Telephone Number:	812/346-8772
General Facsimile Number:	812/346-9181
Responsible Official:	Vice President
County Location:	Jennings
SIC Code:	3321 (Gray Iron Foundry)
Source Categories:	1 of 28 Listed Source Categories Major PSD Source Major Source, CAA Section 112

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]

[326 IAC 2-7-5(15)] [326 IAC 2-7-5(15)]

This stationary source is approved to construct and operate the following emission units and pollution control devices:

A CORE MAKING OPERATIONS

- (1) A raw core sand handling and storage system, with a maximum capacity of 750 pounds of sand per hour, and the uncontrolled emissions exhausting inside the building.
- (2) A core machine with a maximum capacity 0.052 pounds of resin per pound of sand, and 750 pounds of sand per hour; and the uncontrolled emissions exhausting inside the building.
- (3) A core wash with a maximum capacity to emit 11.88 pounds of VOC per hour and the uncontrolled emissions exhausting inside the building.
- (4) A butane torch is use to flash off excess core wash. This torch has a maximum firing rate of 0.36 gallons per hour and 6 MMBTU/hour, and the uncontrolled emissions exhausting inside the building.

B MOLD MAKING OPERATIONS

- (1) A raw mold sand handling and storage system, with a maximum capacity of 165.0

tons of sand per hour, and a dust collector (identified as Baghouse 2) for particulate control.

- (2) A molding machine with a maximum capacity of 165.0 tons of sand per hour, 1.0 pound of plastic per hour, and 0.924 pounds of release agent VOC per hour; and the uncontrolled emissions exhausting inside the building.
- (3) A mold wash with a maximum capacity of 1.20 pounds of mold wash VOC per hour, and the uncontrolled emissions exhausting inside the building.
- (4) Two (2) natural gas fired mold machine dryers, identified as 1 and 2, each rated at 0.00113 million (MM)BTU per hour, and the uncontrolled emissions exhausting inside the building.

C MELTING OPERATIONS

- (1) A charge handling system utilizing mechanical conveyors and magnetic overhead cranes, with maximum capacity of 18 tons of metal per hour, and the uncontrolled emissions exhausting inside the building.
- (2) Three (3) electric induction furnaces, identified as 1, 2, and 3, each rated at 6 tons of metal per hour, and with a donut hood exhausting to a dust collector (identified as Baghouse 1) for particulate control.
- (3) A natural gas fired single chamber rotary kiln dryer with a maximum rate of 18 tons of metal per hour and 7,500 cubic feet/min and 20 MMBTU per hour, with the particulate emissions controlled by Baghouse 1. This rotary kiln dryer is used to evaporate coolants off the metal prior to melting.

NVIC decided not to install an afterburner to the kiln dryer, because the VOC emissions are minimal.

- (4) A ladle with a natural gas fired preheater, with a maximum capacity of 1 MMBTU per hour, and the uncontrolled emissions exhausting inside the building. This preheater is use to dry the ladle prior to each filing.

D FLOOR MOLDING OPERATIONS

- (1) A floor mold wash with a maximum rate of 0.34 pounds of floor mold wash VOC per hour and the uncontrolled emissions exhausting inside the building
- (2) A floor pouring and cooling, with a maximum rate of 18 tons of metal per hour and 0.17 pounds of release agent VOC; utilizing a vacuum suction during pouring and cooling operations, and the controlled emissions exhausting inside the building.
- (3) A shakeout unit/system for casting operation, with a maximum rate of 24 tons of metal per hour, and the particulate emissions controlled by Baghouse 2. Baghouse 2 will recycle all the sand collected back into the mold sand process. Baghouse 2 is the same dust collector in the raw mold sand handling and storage.

E PRE-FINISHING OPERATIONS

- (1) A pre-finish knock out station/area, consisting of three (3) sanders, with a maximum capacity of 24 tons of metal per hour, and a dust collector (identified as Baghouse 4) for particulate control.
- (2) An enclosed shotblast machine, using steel shot as media, with a maximum capacity of 24 tons of metal per hour, with a dust collector (identified as Baghouse 3), rated at 0.03 grain per acfm outlet loading, for particulate control.
- (3) A core removal operation, rated at 24 tons of metal per hour, will remove the remaining sand cores from the casting, and the uncontrolled emissions exhausting inside the building.
- (4) A coarse grinding area consisting of five (5) coarse grinding stations, identified as 1, 2, 3, 4, and 5, with maximum capacity of 24 tons of metal per hour, and the particulate emissions controlled by Baghouse 4.

F FINISHING OPERATIONS

- (1) Filler/putty application to the casting to fill in any divots or scratches, with a maximum rate of 0.05 pounds of VOC per hour for the entire finishing operations and with emissions exhausting inside the building.
- (2) Two (2) paint booths, identified as 1, and 2, each utilizes an air spray gun, each with paper filters for particulate control.
 - (i) Paint booth 1 has a maximum capacity of 9.5 pounds of primer VOC per hour.
 - (ii) Paint booth 2 has a maximum capacity of 10.5 pounds of primer VOC per hour.
- (3) Two (2) paint booth dryers using natural gas as fuel, each rated at 0.0014125 MMBTU per hour, and the uncontrolled emissions exhausting directly to the atmosphere.
- (4) A buffing booth containing three (3) fine grinders or buffers, with a maximum capacity of 24 tons of metal per hour, and a dust collector (identified as Baghouse 5) for particulate control.
- (5) A putty booth used for additional repair, with a maximum capacity of 24 tons of metal per hour, and the particulate emissions are controlled by Baghouse 4. Baghouse 4 is the same dust collector in the pre-finish knock off station and grinders.

G MISCELLANEOUS EMISSION UNITS

- (1) Two (2) emergency generators, identified as 1 and 2, each is rated at 3.07 gallons of diesel fuel no. 2 per hour (125 kilowatts).
- (2) Eight (8) natural gas fired air make up units, identified as 1, 2, 3, 4, 5, 6, 7, and 8; each rated at 4.34 MMBTU/hour.
- (3) Four (4) natural gas fired space heaters, identified as 1, 2, 6, and 7; each rated at

0.3 MMBTU per hour.

- (4) Six (6) natural gas fired space heaters, identified as 3, 4, 5, 8, 9 and 10; each rated at 1.125 MMBTU per hour.
- (5) Two (2) natural gas fired water heaters, identified as 1 and 2; each rated at 0.199 MMBTU per hour.
- (6) A Maintenance Department parts washing station, rated at 0.002 gallons of parts wash solution per hour, with estimated 0.4 pounds of VOC per gallon.
- (7) Paved roads.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

- (a) This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:
 - (i) It is a major source, as defined in 326 IAC 2-7-1(22);
 - (ii) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).
- (b) Pursuant to 326 IAC 2-7-4(a)(1)(A)(ii), the Permittee shall apply for a Part 70 operating permit within twelve (12) months of the date on which the source first meets an applicability criterion of 326 IAC 2-7-2.

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)] [326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5) (Revocation Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction or its equivalent shall be submitted to the:

Indiana Department of Environmental Management
Office of Air Quality, Permit Branch
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

verifying that the emission units were constructed as proposed in the application or the permit.

The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed. **If construction is completed in phases: i.e.: the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for NSPS shall be applicable for to each individual phase.**

- (b) If actual construction of the emissions units differs from the construction proposed in the application or the permit in a manner that is regulated under the provisions of 326 IAC 2-2, the source may not begin operation until the source modification has been revised pursuant to the provisions of that rule and the provisions of 326 IAC 2-1.1-6 and an Operation Permit Validation Letter is issued.
- (c) If actual construction of the emissions units differs from the construction proposed in the application or the permit in a manner that is not regulated under the provisions of 326 IAC 2-2, the source may not begin operation until the source modification has been revised pursuant to the provisions of that rule and the provisions of 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.
- (d) The Permittee shall attach the Operation Permit Validation Letter to this permit.

B.5 Annual Operating Fees

The Permittee shall be subject to annual operating permit fees, pursuant to 326 IAC 2-7-19 (Fees).

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form or equivalent, with each submittal requiring certification.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)]

- [326 IAC 1-6-3] [326 IAC 1-6-3]
- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare, maintain, and implement Preventive Maintenance Plans (PMPs) when operation begins, including the following information on each facility:
 - (1) Identification by jobs or titles of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.
- (c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ.
- (d) The IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit.
- (e) To the extent the Permittee is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

C.3 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section C - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015

Indianapolis, Indiana 46206-6015

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent.

A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the Aresponsible official® as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

C.4 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12] [326 IAC 2-7-5(6)(C)]

[326 IAC 2-7-8(a)] [326 IAC 2-7-9]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

Any such application shall be certified by the Aresponsible official® as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

C.5 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

326 IAC 6-4-2(4) is not federally enforceable.

C.7 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

C.8 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential before controls of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

The provisions of 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4(d), (e), and (f), and 326 IAC 1-7-5(d) are not federally enforceable.

C.9 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

The Permittee shall comply with the applicable requirements of 326 IAC 14-10, 326 IAC 18, and 40 CFR 61.140.

Testing Requirements [326 IAC 2-7-6(1)]

C.10 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date.

The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date.

The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing.

- (d) An extension may be granted by IDEM, OAQ, if the source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.11 Compliance Requirements [326 IAC 2-1.1-11]

- (a) The Commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11.
- (b) Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the Commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.12 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) If required by Section D of this permit, all monitoring and record keeping requirements shall be implemented when operation begins.
- (b) If required by Section D of this permit, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.14 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading.
- (b) Whenever a condition in this permit requires the measurement of a (temperature, or flow rate), the instrument employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent (±2%) of full scale reading.
- (c) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.15 Compliance Response Plan - Preparation, Implementation, Records, and Reports

[326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit.

A CRP shall be submitted to IDEM, OAQ upon request.

The CRP shall be prepared when operation begins, by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:

- (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
- (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan and the Permittee documents such response in accordance with subsection (e) below, the Permittee shall amend its Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan to include such response steps taken.

If the Permittee is required to have an Operation, Maintenance and Monitoring (OMM) Plan under 40 CFR 60 or 40 CFR 63, such plan shall be deemed to satisfy the requirements for a CRP for those compliance monitoring conditions.

The OMM Plan shall be submitted within the time frames specified by the applicable 40 CFR 60 or 40 CFR 63 requirement.

- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan or Operation, Maintenance and Monitoring (OMM) Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be 10 days or more until the unit or device will be shut down, then the Permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered deviation from the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:

- (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within Anormal@ parameters and no response steps are required.
- (d) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section C-Deviations from Permit Requirements and Conditions.
- (e) The Permittee shall record all instances when response steps, in accordance with Section D of this permit, are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.
- (f) Except as otherwise provided by a rule or provided specifically in Section D of this permit, all monitoring as required in Section D of this permit shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

C.16 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, no later than four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section),
or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the Aresponsible official® as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
 - (e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(9) be revised in response to an emergency.
 - (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
 - (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (h) Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report or its equivalent.

C.17 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68.215]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the source must comply with the applicable requirements of 40 CFR 68.

C.18 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]

[326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions.

The Permittee shall submit a description of these response actions to IDEM, OAQ, no later than thirty (30) days of receipt of the test results.

The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

- (b) A retest to demonstrate compliance shall be performed no later than one hundred twenty (120) days of receipt of the original test results.

Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.19 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)] [326 IAC 2-6]

- (a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4.

The annual emission statement shall meet the following requirements:

- (1) Indicate estimated actual emissions of criteria pollutants from the source, in compliance with 326 IAC 2-6 (Emission Reporting);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1 (A Regulated pollutant which is used only for purposes of Section 19 of this rule) from the source, for purposes of Part 70 fee assessment.

- (b) The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

The annual emission statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality

100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

C.20 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required monitoring data, reports and support information required by this Permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application.

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years.

The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request.

If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when operation begins.

C.21 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

- (a) The source shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent.

Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported.

This report shall be submitted no later than thirty (30) days of the end of the reporting period.

The Quarterly Deviation and Compliance Monitoring Report or its equivalent shall include the certification by the responsible official as defined by 326 IAC 2-7-1(34).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due.

If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted no later than thirty (30) days of the end of the reporting period.

All reports, except as specified otherwise, do require the certification by the responsible official as defined by 326 IAC 2-7-1(34).

- (e) The first report shall cover the period commencing on the date after initial start up and ending on the last day of the reporting period.

Reporting periods are based on calendar years.

C.22 Part 2 MACT Application [40 CFR 63.52(e)] [40 CFR 63.56(a)] [40 CFR 63.9(b)] [326 IAC 2-7-12]

Pursuant to the application Requirements for Section 112(j) of the Clean Air Act [40 CFR 63.52(e)] [40 CFR 63.56(a)] [40 CFR 63.9(b)] [326 IAC 2-7-12]

- (a) The Permittee shall submit a Part 2 MACT Application in accordance with 40 CFR 63.52(e)(1). The Part 2 MACT Application shall meet the requirements of 40 CFR 63.53(b).
- (b) Notwithstanding paragraph (a), the Permittee is not required to submit a Part 2 MACT Application if the Permittee no longer meets the applicability criteria of 40 CFR 63.50 by the application deadline in 40 CFR 63.52(e)(1). For example, the Permittee would not have to submit a Part 2 MACT Application if, by the application deadline:
 - (i) The source is no longer a major source of hazardous air pollutants, as defined in 40 CFR 63.2;
 - (ii) The MACT standard or standards for the affected source categories included at the source are promulgated.
- (c) Notwithstanding paragraph (a), pursuant to 40 CFR 63.56(a), the Permittee shall comply with an applicable promulgated MACT standard in accordance with the schedule provided in the MACT standard if the MACT standard is promulgated prior to the Part 2 MACT Application deadline or prior to the issuance of permit with a case-by-case Section 112(j) MACT determination. The MACT requirements include the applicable General Provisions requirements of 40 CFR 63, Subpart A. Pursuant to 40 CFR 63.9(b), the Permittee shall submit an initial notification not later than 120 days after the effective date of the MACT, unless the MACT specifies otherwise.

The initial notification shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	CORE MAKING OPERATIONS
(1)	A raw core sand handling and storage system, with a maximum capacity of 750 pounds of sand per hour, and the uncontrolled emissions exhausting inside the building.
(2)	A core machine with a maximum capacity 0.052 pounds of resin per pound of sand, and 750 pounds of sand per hour; and the uncontrolled emissions exhausting inside the building.
(3)	A core wash with a maximum capacity to emit 11.88 pounds of VOC per hour and the uncontrolled emissions exhausting inside the building.
(4)	A butane torch is use to flash off excess core wash. This torch has a maximum firing rate of 0.36 gallons per hour and 6 MMBTU/hour, and the uncontrolled emissions exhausting inside the building.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.1.1 PSD Minor Limitations [326 IAC 2-2]

- (a) The raw core sand usage shall not exceed 2,000 tons of core sand per 12-consecutive month period, with compliance demonstrated at the end of each month.
- The particulate emissions shall not exceed the rate of 3.60 pounds of PM per ton of core sand and 0.54 pounds of PM10 per ton of core sand.
- (b) The core resin usage shall not exceed 2.83 tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to 5,000 gallons of core resin per year at 1.13 pounds of VOC per gallon.
- (c) The core wash usage shall not exceed 8.80 tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to 4,000 gallons of core wash per year at 4.40 pounds of VOC per gallon.

Compliance by the Permittee with these limitations makes the requirements of 326 IAC 2-2 (PSD), 326 IAC 8-1-6 (BACT) and 326 IAC 2-4.1-1 (HAPs) not applicable.

D.1.2 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the raw core sand handling shall not exceed 2.13 pounds per hour when operating at a process weight rate of 750 pounds per hour.

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

D.1.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP), in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the raw core sand handling and core machine.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.1.4 Volatile Organic Compound (VOC) [326 IAC 8-1-2]{326 IAC 8-1-4}

Compliance with the VOC content contained in Condition Nos. D.1.1(b) and D.1.1(c) shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

None

Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.5 Record Keeping Requirements

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) The Permittee shall maintain records of the actual amount of raw core sand used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the raw core sand usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.
- (c) The Permittee shall maintain records of the VOC content of the core resin and core wash used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limitations. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
- (d) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP) and make available upon request to IDEM, OAQ, and the US EPA.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.
- (f) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

D.1.6 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) The Permittee shall submit a quarterly report of the actual amount of raw core sand, core resin and core wash used, using the Quarterly Production Report, or its equivalent.
- (b) These reports shall be submitted no later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.

- (c) These reports do require the certification by the responsible official, as defined by 326 IAC 2-7-1(34).

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	MOLD MAKING OPERATIONS
(1)	A raw mold sand handling and storage system, with a maximum capacity of 165.0 tons of sand per hour, and a dust collector (identified as Baghouse 2) for particulate control.
(2)	A molding machine with a maximum capacity of 165.0 tons of sand per hour, 1.0 pound of plastic per hour, and 0.924 pounds of release agent VOC per hour; and the uncontrolled emissions exhausting inside the building.
(3)	A mold wash with a maximum capacity of 1.20 pounds of mold wash VOC per hour, and the uncontrolled emissions exhausting inside the building.
(4)	Two (2) natural gas fired mold machine dryers, identified as 1 and 2, each rated at 0.00113 million (MM)BTU per hour, and the uncontrolled emissions exhausting inside the building.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.2.1 PSD Minor Limitations [326 IAC 2-2]

- (a) The raw mold sand usage shall not exceed 1,445,400 tons of sand per 12-consecutive month period, with compliance demonstrated at the end of each month.
- Since Baghouse 2 controls both the:
- mold sand handling system (Section D.1) and
 - shakeout system (Section D.4),
- the total particulate emissions from Baghouse 2 shall not exceed the rate of 4.20 pounds of PM per ton of metal and 3.75 pounds of PM10 per ton of metal.
- (b) The mold plastic usage shall not exceed 0.83 ton of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to the maximum capacity of 8,760 pounds of plastic per 12-consecutive month period at 19% volatile.
- (c) The mold release agent usage shall not exceed 4.40 tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to 2,000 gallons of release agent per year at 4.40 pounds of VOC per gallon.
- (d) The mold wash usage shall not exceed 5.26 tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to 62,200 gallons of mold wash per year at 0.17 pounds of VOC per gallon.

Compliance by the Permittee with these limitations makes the requirements of 326 IAC 2-2 (PSD), 326 IAC 8-1-6 (BACT) and 326 IAC 2-4.1-1 (HAPs) not applicable.

D.2.2 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the mold machine sand handling shall not exceed **56.44** pounds per hour when operating at a process weight rate of **165.0** tons per hour.

Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 55.0P^{0.11} - 40 \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan (PMP), in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the mold sand handling, Baghouse 2 and molding machine.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.2.4 Particulate Matter Control

The dust collector (Baghouse 2) for particulate control shall be in operation at all times when the mold sand handling is in operation.

D.2.5 Volatile Organic Compound (VOC) [326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC content contained in Condition Nos. D.2.1(b), D.2.1(c) and D.2.1(d) shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.2.6 Natural Gas Fuel

The Permittee shall use pipeline natural gas in the mold machine dryers. The natural gas shall be naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by supplier through a pipeline.

Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which result in highly variable sulfur content or heating value.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.2.7 Visible Emissions Notations

- (a) Visible emission notations of the Baghouse 2 stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or

expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

D.2.8 Baghouse Parametric Monitoring

The Permittee shall record the total static pressure drop across Baghouse 2, at least once per shift, when the mold sand handling is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 1 and 8 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above-mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.2.9 Baghouses Inspections

- (a) An inspection shall be performed each calendar quarter of Baghouse 2, when venting to the atmosphere.
- (b) Inspections are optional when venting to the indoor.
- (c) Inspections required by this condition shall not be performed in consecutive months.
- (d) All defective bags shall be replaced or repaired.

D.2.10 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports, shall be

considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.2.11 Record Keeping Requirements

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) The Permittee shall maintain records of the amount of mold sand used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the mold sand usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.
- (c) The Permittee shall maintain records of the actual amount of mold plastic used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the mold plastic usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.
- (d) The Permittee shall maintain records of the VOC content of the mold release agent and mold wash used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limitations. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
- (e) The Permittee shall maintain records of the following and make available upon request to IDEM, OAQ, and the US EPA.
 - (i) The once per shift visible emissions notations of the Baghouse 2 stack exhaust.
 - (ii) The once per shift total static pressure during normal operation when venting to the atmosphere and the documentation of all response steps implemented for every pressure drop reading that is outside the range.
 - (iii) The results of the quarterly baghouse inspections and failure detection.
 - (iv) The dates the vents are redirected.

- (f) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP) and make available upon request to IDEM, OAQ, and the US EPA.
- (g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.
- (h) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

D.2.12 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) The Permittee shall submit a quarterly report of the actual amount of mold sand, mold plastic, mold release agent and mold wash used, using the Quarterly Production Report, or its equivalent.
- (b) These reports shall be submitted no later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.
- (c) These reports do require the certification by the responsible official, as defined by 326 IAC 2-7-1(34).

SECTION D.3

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	MELTING OPERATIONS
(1)	A charge handling system utilizing mechanical conveyors and magnetic overhead cranes, with maximum capacity of 18 tons of metal per hour, and the uncontrolled emissions exhausting inside the building.
(2)	Three (3) electric induction furnaces, identified as 1, 2, and 3, each rated at 6 tons of metal per hour, and with a donut hood exhausting to a dust collector (identified as Baghouse 1) for particulate control.
(3)	<p>A natural gas fired single chamber rotary kiln dryer with a maximum rate of 18 tons of metal per hour and 7,500 cubic feet/min and 20 MMBTU per hour, with the particulate emissions controlled by Baghouse 1. This rotary kiln dryer is used to evaporate coolants off the metal prior to melting.</p> <p>NVIC decided not to install an afterburner to the kiln dryer, because the VOC emissions are minimal.</p>
(4)	A ladle with a natural gas fired preheater, with a maximum capacity of 1 MMBTU per hour, and the uncontrolled emissions exhausting inside the building. This preheater is use to dry the ladle prior to each filing.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.3.1 PSD Minor Limitations

- (a) The charge handling system shall not exceed 120,000 tons of metal per 12-consecutive month period, with compliance demonstrated at the end of each month.
- (b) The particulate emissions from the charging handling system shall not exceed the rate of 0.60 pounds of PM per ton of metal and 0.36 pounds of PM10 per ton of metal.
- (c) The particulate emissions from the electric induction furnaces shall not exceed the rate of 0.95 pounds of PM per ton of metal chips and 0.86 pounds of PM10 per ton of metal chips.
- (d) The metal chips used in the rotary kiln dryer shall not exceed 120,000 tons metal chips per 12-consecutive month period; with compliance demonstrated at the end of each month.
- (e) The volatile emissions from the rotary kiln dryer shall not exceed the rate of 0.10 pounds of VOC per ton of metal.

Compliance by the Permittee with these limitations makes the requirements of 326 IAC 2-2 (PSD), 326 IAC 8-1-6 (BACT) and 326 IAC 2-4.1-1 (HAPs) not applicable.

D.3.2 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the metal and charge handling and electric induction furnace shall not exceed 28.43 pounds per hour when operating at a process weight rate of 18 tons per hour.

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

D.3.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the metal and charge handling, electric induction furnaces, Baghouse 1, and rotary kiln dryer.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.3.4 Particulate Matter Control

The dust collector (Baghouse 1) for particulate control shall be in operation at all times when one or both the electric induction furnaces and kiln dryer are in operation.

D.3.5 Natural Gas Fuel

The Permittee shall use pipeline natural gas in the rotary kiln dryer and ladle preheater. The natural gas shall be naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by supplier through a pipeline.

Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.3.6 Visible Emissions Notations

- (a) Visible emission notations of the Baghouse 1 stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

D.3.7 Baghouses Parametric Monitoring

The Permittee shall record the total static pressure drop across Baghouse 1, at least once per shift, when one or both electric induction furnaces are in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 1 and 8 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above-mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.3.8 Baghouses Inspections

- (a) An inspection shall be performed each calendar quarter of Baghouse 1, when venting to the atmosphere.
- (b) A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter.
- (c) Inspections are optional when venting to the indoor.
- (d) Inspections required by this condition shall not be performed in consecutive months.
- (e) All defective bags shall be replaced.

D.3.9 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit. [If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.](#)

- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.3.10 Record Keeping Requirements

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) The Permittee shall maintain records of the amount of metal and charge used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the metal and charge usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.
- (c) The Permittee shall maintain records of the following and make available upon request to IDEM, OAQ, and the US EPA.
 - (i) The once per shift visible emissions notations of the Baghouse 1 stack exhaust.
 - (ii) The once per shift total static pressure during normal operation when venting to the atmosphere and the documentation of all response steps implemented for every pressure drop reading that is outside the range.
 - (iii) The results of the quarterly baghouse inspections and failure detection.
 - (iv) The dates the vents are redirected.
- (d) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP) and make available upon request to IDEM, OAQ, and the US EPA.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.
- (f) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

D.3.11 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) The Permittee shall submit a quarterly report of the actual amount of metal, charge and chips used, using the Quarterly Production Report, or its equivalent.
- (b) These reports shall be submitted no later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.
- (c) These reports do require the certification by the responsible official, as defined by 326 IAC 2-7-1(34).

SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	FLOOR MOLDING OPERATIONS
(1)	A floor mold wash with a maximum rate of 0.34 pounds of floor mold wash VOC per hour and the uncontrolled emissions exhausting inside the building
(2)	A floor pouring and cooling, with a maximum rate of 18 tons of metal per hour and 0.17 pounds of release agent VOC; utilizing a vacuum suction during pouring and cooling operations, and the controlled emissions exhausting inside the building.
(3)	A shakeout unit/system for casting operation, with a maximum rate of 24 tons of metal per hour, and the particulate emissions controlled by Baghouse 2. Baghouse 2 will recycle all the sand collected back into the mold sand process. Baghouse 2 is the same dust collector in the raw mold sand handling and storage.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.4.1 PSD Minor Limitations

- (a) The floor mold wash usage shall not exceed 1.49 tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to 17,520 gallons of floor mold wash per year at 0.17 pounds of VOC per gallon.
- (b) The metal used in the floor pouring and cooling shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month.
- The particulate emissions shall not exceed the rate of 0.10 pounds of PM per ton of metal and 0.10 pounds of PM10 per ton of metal.
- (c) The metal used in the shakeout system shall not exceed 120,000 tons of metal per 12-consecutive month period, with compliance demonstrated at the end of each month.
- Since Baghouse 2 controls both the:
- - mold sand handling system (Section D.1) and
 - - shakeout system (Section D.4),
- the total particulate emissions from Baghouse 2 shall not exceed the rate of 4.20 pounds of PM per ton of metal and 3.75 pounds of PM10 per tons of metal.

Compliance by the Permittee with these limitations makes the requirements of 326 IAC 2-2 (PSD), 326 IAC 8-1-6 (BACT) and 326 IAC 2-4.1-1 (HAPs) not applicable.

D.4.2 Particulate [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the floor pouring/cooling shall not exceed 57.57

pounds per hour when operating at a process weight rate of **18 tons of metal and 165.38 tons of mold and core sand** per hour.

Interpolation extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = (55)(P^{0.11}) - 40 \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

- (b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the shakeout unit shall not exceed 60.71 pounds per hour when operating at a process weight rate of **24 tons of metal and 220.50 tons of mold and core sand** tons per hour.

Interpolation extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = (55)(P^{0.11}) - 40 \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

D.4.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the floor pouring/cooling and its vacuum system, and shakeout unit and its Baghouse 2.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.4.4 Particulate Matter Control

- (a) The vacuum system for particulate control shall be in operation at all times when the floor pouring/cooling is in operation.
- (b) The dust collector (Baghouse 2) for particulate control shall be in operation at all times when the shakeout unit is in operation.

D.4.5 Volatile Organic Compound (VOC) [326 IAC 8-1-2][326 IAC 8-1-4]

Compliance with the VOC content contained in Condition No. D.4.1(a) shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.4.6 Visible Emissions Notations

- (a) Visible emission notations of the Baghouse 2 stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not

counting startup or shut down time.

- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

D.4.7 Baghouses Parametric Monitoring

The Permittee shall record the total static pressure drop across Baghouse 2, at least once per shift, when the shakeout unit is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 1 and 8 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.4.8 Baghouse Inspections

- (a) An inspection shall be performed each calendar quarter of Baghouse 2, when venting to the atmosphere.
- (b) A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter.
- (c) Inspections are optional when venting to the indoor.
- (d) Inspections required by this condition shall not be performed in consecutive months.
- (e) All defective bags shall be replaced.

D.4.9 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a

timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

D.4.10 Vacuum System Inspections

- (a) An inspection shall be performed, each calendar quarter, of the floor pouring/cooling vacuum system.
- (b) Inspections required by this condition shall not be performed in consecutive months.

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.4.11 Record Keeping Requirements

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) The Permittee shall maintain records of the amount of metal used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the metal usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.
- (c) The Permittee shall maintain records of the VOC content of the floor mold wash used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limitations. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
- (d) The Permittee shall maintain records of the following and make available upon request to IDEM, OAQ, and the US EPA.
 - (i) The once per shift visible emissions notations of the Baghouse 2 stack exhaust.
 - (ii) The once per shift total static pressure during normal operation when venting to the atmosphere and the documentation of all response steps implemented for every pressure drop reading that is outside the range.
 - (iii) The results of the quarterly baghouse inspections and failure detection.
 - (iv) The results of the quarterly vacuum system inspections.

- (v) The dates the vents are redirected.
- (e) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP) and make available upon request to IDEM, OAQ, and the US EPA.
- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.
- (g) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

D.4.12 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) The Permittee shall submit a quarterly report of the actual amount of metal and floor mold wash used, using the Quarterly Production Report, or its equivalent.
- (b) These reports shall be submitted no later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.
- (c) These reports do require the certification by the responsible official, as defined by 326 IAC 2-7-1(34).

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	PRE-FINISHING OPERATIONS
(1)	A pre-finish knock out station/area, consisting of three (3) sanders, with a maximum capacity of 24 tons of metal per hour, and a dust collector (identified as Baghouse 4) for particulate control.
(2)	An enclosed shotblast machine, using steel shot as media, with a maximum capacity of 24 tons of metal per hour, with a dust collector (identified as Baghouse 3), rated at 0.03 grain per acfm outlet loading, for particulate control.
(3)	A core removal operation, rated at 24 tons of metal per hour, will remove the remaining sand cores from the casting, and the uncontrolled emissions exhausting inside the building.
(4)	A coarse grinding area consisting of five (5) coarse grinding stations, identified as 1, 2, 3, 4, and 5, with maximum capacity of 24 tons of metal per hour, and the particulate emissions controlled by Baghouse 4.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.5.1 PSD Minor Limitations [326 IAC 2-2]

- (a) The metal used in the pre-finish knock out station/area, core removal operation, and coarse grinding stations shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month.

The particulate emissions shall not exceed the rate of 0.75 pounds of PM per ton of metal and 2.00 pounds of PM10 per ton of metal.

- (b) The metal used in the shotblast machine shall not exceed 120,000 tons of metal per 12-consecutive month period, with compliance demonstrated at the end of each month.

The particulate emissions shall not exceed the rate of 0.75 pounds of PM per ton of metal and 0.60 pounds of PM10 per tons of metal.

Compliance by the Permittee with these limitations makes the requirements of 326 IAC 2-2 (PSD), 326 IAC 8-1-6 (BACT) and 326 IAC 2-4.1-1 (HAPs) not applicable.

D.5.2 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the pre-finish knock out station, shotblast machine, core removal and grinding stations shall each not exceed 34.48 pounds per hour when operating at a process weight rate of 24 tons per hour.

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 4.10P^{0.67}$$

where: E = rate of emissions in pounds per hour, and

P = process weight rate in tons per hour.

D.5.3 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the shotblast machine, Baghouse 3 and Baghouse 4.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.5.4 Particulate Matter Control

- (a) The dust collector (Baghouse 3) for particulate control shall be in operation at all times when the shotblast machine is in operation.
- (b) The dust collector (Baghouse 4) for particulate control shall be in operation at all times when either the pre-finish knock out station or one or more of the grinding stations are in operation.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.5.5 Visible Emissions Notations

- (a) Visible emission notations of the:
 - (i) Baghouse 3 stack exhaust, and
 - (ii) Baghouse 4 stack exhaust

shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

D.5.6 Baghouse Parametric Monitoring

The Permittee shall record the total static pressure drop across Baghouse 3 and Baghouse 4, at least once per shift, when the shotblast machine is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 1 and 8 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is

outside of the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.5.7 Baghouse Inspections

- (a) An inspection shall be performed each calendar quarter of Baghouse 3 and Baghouse 4, when venting to the atmosphere.
- (b) A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter.
- (c) Inspections are optional when venting to the indoor.
- (d) Inspections required by this condition shall not be performed in consecutive months.
- (e) All defective bags shall be replaced.

D.5.8 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit. [If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.](#)
- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.5.9 Record Keeping Requirements

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.

- (b) The Permittee shall maintain records of the amount of metal used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the metal usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.
- (c) The Permittee shall maintain records of the following and make available upon request to IDEM, OAQ, and the US EPA.
 - (i) The once per shift visible emissions notations of the Baghouse 3 stack exhaust and Baghouse 4 stack exhaust.
 - (ii) The once per shift total static pressure during normal operation when venting to the atmosphere and the documentation of all response steps implemented for every pressure drop reading that is outside the range.
 - (iii) The results of the quarterly baghouse inspections and failure detection.
 - (iv) The dates the vents are redirected.
- (d) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP) and make available upon request to IDEM, OAQ, and the US EPA.
- (e) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.

D.5.10 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) The Permittee shall submit a quarterly report of the actual amount of metal and charge, using the Quarterly Production Report, or its equivalent.
- (b) These reports shall be submitted no later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.
- (c) These reports do require the certification by the responsible official, as defined by 326 IAC 2-7-1(34).

SECTION D.6

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	FINISHING OPERATIONS
(1)	Filler/putty application to the casting to fill in any divots or scratches, with a maximum rate of 0.05 pounds of VOC per hour for the entire finishing operations and with emissions exhausting inside the building.
(2)	Two (2) paint booths, identified as 1, and 2, each utilizes an air spray gun, each with paper filters for particulate control. (i) Paint booth 1 has a maximum capacity of 9.5 pounds of primer VOC per hour. (ii) Paint booth 2 has a maximum capacity of 10.5 pounds of primer VOC per hour.
(3)	Two (2) paint booth dryers using natural gas as fuel, each rated at 0.0014125 MMBTU per hour, and the uncontrolled emissions exhausting directly to the atmosphere.
(4)	A buffing booth containing three (3) fine grinders or buffers, with a maximum capacity of 24 tons of metal per hour, and a dust collector (identified as Baghouse 5) for particulate control.
(5)	A putty booth used for additional repair, with a maximum capacity of 24 tons of metal per hour, and the particulate emissions are controlled by Baghouse 4. Baghouse 4 is the same dust collector in the pre-finish knock off station and grinders.
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.6.1 PSD Minor Limitations [326 IAC 2-2]

- (a) The filler/putty used in the entire Finishing Operations shall not exceed 438 pounds of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.

This is equivalent to 8,760 gallons of filler/putty per year at 0.05 pounds of VOC per gallon.

- (b) The primer used in Paint booth 1 and Paint booth 2 shall not exceed 38 tons of VOC pounds per 12-consecutive month period, with compliance demonstrated at the end of each month.

Compliance by the Permittee with these limitations makes the requirements of 326 IAC 2-2 (PSD), and 326 IAC 2-4.1-1 (HAPs) not applicable.

D.6.2 Volatile Organic Compound (VOC) Limitation [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9, the Permittee shall not allow the discharge into the atmosphere of VOC in excess of 3.5 pounds of VOC per gallon coating, excluding water, as delivered to the applicator.

D.6.3 Volatile Organic Compound (VOC) Limitation, Clean-up Requirements [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9(f), all solvents sprayed from the application equipment of Paint booth 1 and Paint booth 2 during clean up or color changes shall be directed into containers. Such

containers shall be closed as soon as the solvent spraying is complete. In addition, all waste solvent shall be disposed of in such a manner that minimizes evaporation.

D.6.4 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the buffing booth shall each not exceed 34.48 pounds per hour when operating at a process weight rate of 24 tons per hour.

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

D.6.5 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for the Paint booth 1, Paint booth 2, and their paper filters.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.6.6 Particulate Matter Control

- (a) The paper filters for particulate control shall be in operation at all times when the Paint booth 1 and Paint booth 2 are in operation.
- (b) The dust collector (Baghouse 5) for particulate control shall be in operation at all times when the buffing booth is in operation.

D.6.7 Volatile Organic Compound (VOC) [326 IAC 8-1-2]{326 IAC 8-1-4}

Compliance with the VOC content contained in Condition Nos. D.6.1 and D.6.2 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM OAQ reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.6.8 Visible Emissions Notations

- (a) Visible emission notations of the:
 - (i) Paint booth 1 stack exhaust,
 - (ii) Paint booth 2 stack exhaust, and
 - (iii) Baghouse 5 stack exhaust

shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) this permit.

D.6.9 Baghouse Parametric Monitoring

The Permittee shall record the total static pressure drop across Baghouse 5, at least once per shift, when the shotblast machine is in operation when venting to the atmosphere. Unless operated under conditions for which the Compliance Response Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 1 and 8 inches of water or a range established during the latest stack test. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when the pressure reading is outside of the above mentioned range for any one reading. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a [deviation from](#) of this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.6.10 Baghouse Inspections

- (a) An inspection shall be performed each calendar quarter of Baghouse 5, when venting to the atmosphere.
- (b) A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter.
- (c) Inspections are optional when venting to the indoor.
- (d) Inspections required by this condition shall not be performed in consecutive months.
- (e) All defective bags shall be replaced.

D.6.11 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C -

Compliance Response Plan - Preparation, Implementation, Records and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

- (b) For single compartment baghouses, failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section C - Emergency Provisions).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.6.12 Record Keeping Requirements

- (a) The Permittee shall maintain records required under 326 IAC 3-5-6 at the source in a manner that they may be inspected by the IDEM, OAQ, or the US EPA, if so requested or required.
- (b) The Permittee shall maintain records of the VOC content of the filler/putty and primer used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limitations. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
- (c) The Permittee shall maintain records of the once per shift visible emissions notations of the Paint booth 1 and Paint booth 2 exhausts and make available upon request to IDEM, OAQ, and the US EPA.
- (d) The Permittee shall maintain records of the following and make available upon request to IDEM, OAQ, and the US EPA.
 - (i) The once per shift visible emissions notations of the Baghouse 5 stack exhaust.
 - (ii) The once per shift total static pressure during normal operation when venting to the atmosphere and the documentation of all response steps implemented for every pressure drop reading that is outside the range.
 - (iii) The results of the quarterly baghouse inspections and failure detection.
 - (iv) The dates the vents are redirected.
- (e) The Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan (PMP) and make available upon request to IDEM, OAQ, and the US EPA.
- (f) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

- (g) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.

D.6.13 Reporting Requirements [326 IAC 2-1.1-11] [40 CFR 60.276a]

- (a) The Permittee shall submit a quarterly report of the actual amount of the filler/putty and primer VOC used, using the Quarterly Production Report, or its equivalent.
- (b) These reports shall be submitted no later than thirty (30) calendar days following the end of each calendar quarter and in accordance with Section C - General Reporting Requirements of this permit.
- (c) These reports do require the certification by the responsible official, as defined by 326 IAC 2-7-1(34).

SECTION D.7 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]	MISCELLANEOUS EMISSION UNITS
(1) Two (2) emergency generators, identified as 1 and 2, each is rated at 3.07 gallons of diesel fuel no. 2 per hour (125 kilowatts).	
(2) Eight (8) natural gas fired air make up units, identified as 1, 2, 3, 4, 5, 6, 7, and 8; each rated at 4.34 MMBTU/hour.	
(3) Four (4) natural gas fired space heaters, identified as 1, 2, 6, and 7; each rated at 0.3 MMBTU per hour.	
(4) Six (6) natural gas fired space heaters, identified as 3, 4, 5, 8, 9 and 10; each rated at 1.125 MMBTU per hour.	
(5) Two (2) natural gas fired water heaters, identified as 1 and 2; each rated at 0.199 MMBTU per hour.	
(6) A Maintenance Department parts washing station, rated at 0.002 gallons of parts wash solution per hour, with estimated 0.4 pounds of VOC per gallon.	
(7) Paved roads.	
(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)	

Emission Limitations and Standards [326 IAC 2-7-5(1)] [326 IAC 2-2-3(a)(3)]

D.7.1 Emergency Generators Operating Limitations

The Permittee shall comply with the following:

- (a) Each emergency generator shall solely provide back up power when electric power is interrupted.
- (b) Each emergency generator shall not operate more than 500 hours 12-consecutive month period, with compliance determined at the end of each month.
- (c) The sulfur content of the diesel fuel used shall not exceed 0.05 percent by weight.

D.7.2 Volatile Organic Compound [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), for cold cleaning operations constructed after January 1, 1980, Permittee shall:

- (a) Equip the cleaner with a cover;
- (b) Equip the cleaner with a facility for draining cleaned parts;
- (c) Close the degreaser cover whenever parts are not being handled in the cleaner;

- (d) Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) Provide a permanent, conspicuous label summarizing the operation requirements;
- (f) Store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.7.3 Paved Roads

The Permittee shall paved access all roads and parking lots surrounding the source.

Compliance Determination Requirements [326 IAC 2-1.1-11]

D.7.4 Natural Gas Fuel

The Permittee shall use pipeline natural gas in the air make up units and heaters. The natural gas shall be naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by supplier through a pipeline.

Natural gas does not include the following gaseous fuels: landfill gas, digester gas, refinery gas, sour gas, blast furnace gas, coal-derived gas, producer gas, coke oven gas, or any gaseous fuel produced in a process which might result in highly variable sulfur content or heating value.

Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

None

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.7.5 Record Keeping Requirements

- (a) The Permittee shall maintain records of the hours of operation of the emergency generators and make available upon request to IDEM, OAQ and the US EPA.
- (b) Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements of this permit.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
CERTIFICATION**

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this approval.

Please check what document is being certified:

- ☐ Test Result (specify)
- ☐ Report (specify)
- ☐ Notification (specify)
- ☐ ☐ Affidavit (specify)
- ☐ Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: P.O. Box 894, North Vernon, IN 47265
SSM Permit: 079-17819-00018

Months: _____ to _____ Year: _____

This report shall be submitted quarterly based on a calendar year.

Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. Deviations that are required to be reported by an applicable requirement shall be reported according to the schedule stated in the applicable requirement and do not need to be included in this report. If no deviations occurred, please specify in the box marked **NO deviations occurred this reporting period**.

Additional pages may be attached if necessary.

? NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

? THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)

Date of Deviation:

Duration of Deviation:

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
EMERGENCY OCCURRENCE REPORT**

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018

?	The Permittee must notify the Office of Air Quality (OAQ), no later than four (4) daytime business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
?	The Permittee must submit notice in writing or by facsimile no later than two (2) working days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.
Address: 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana 46206-6015	
If any of the following are not applicable, mark N/A	
Facility/Equipment/Operation:	
Control Equipment:	
Permit Condition or Operation Limitation in Permit:	
Description of the Emergency:	
Describe the cause of the Emergency:	
Date/Time Emergency started:	
Date/Time Emergency was corrected:	
Was the facility being properly operated at the time of the emergency? Y N	
Describe:	
Type of Pollutants Emitted: TSP, PM ₁₀ , SO ₂ , VOC, NO _x , CO, Pb, other:	
Estimated amount of pollutant(s) emitted during emergency:	
Describe the steps taken to mitigate the problem:	
Describe the corrective actions/response steps taken:	
Describe the measures taken to minimize emissions:	
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:	

Form Completed By:
Title/Position:
Date:
Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is NOT required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

RAW CORE SAND LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Raw Core Sand Limitation: 2,000 tons of core sand/year [Condition D.1.1(a)]

Reporting Year:			
Month	This month (tons/month)	Previous 11 Months	12 Month Total (tons/year)

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

CORE RESIN LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Core Resin Limitation: 2.83 tons of VOC resin/year [Condition D.1.1(b)]
5,000 gallons of resin/year at 1.13 pounds of VOC/gallon.

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of resin			
	tons of VOC			
	gallons of resin			
	tons of VOC			
	gallons of resin			
	tons of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

CORE WASH LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Core Wash Limitation: 8.8 tons of VOC core wash/year [Condition D.1.1(c)]
4,000 gallons of core wash/year at 4.4 pounds of VOC/gallon.

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of wash			
	tons of VOC			
	gallons of wash			
	tons of VOC			
	gallons of wash			
	tons of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

RAW MOLD SAND LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Raw Mold Sand Limitation: [1,445,400 tons of mold](#) sand/year [Condition D.2.1(a)]

Reporting Year:			
Month	This month (tons/month)	Previous 11 Months	12 Month Total (tons/year)

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

MOLD PLASTIC LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Raw Mold Plastic Limitation: 8,760 pounds of mold plastic/year [Condition D.2.1(b)]

Reporting Year:			
Month	This month (pounds/month)	Previous 11 Months	12 Month Total (pounds/year)

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

MOLD RELEASE AGENT LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Mold Release Agent Limitation: 4.41 tons of VOC mold agent/year [Condition D.2.1(c)]
2,000 gallons of mold release agent/year at 4.4 pounds of VOC/gallon

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of release agent			
	tons of VOC			
	gallons of release agent			
	tons of VOC			
	gallons of release agent			
	tons of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

MOLD WASH LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Mold Wash Limitation: 5.26 tons of VOC mold wash/year [Condition D.2.1(d)]
62,200 gallons of mold wash/year at 0.17 pounds of VOC/gallon

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of mold wash			
	tons of VOC			
	gallons of mold wash			
	tons of VOC			
	gallons of mold wash			
	tons of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
METAL LIMITATION QUARTERLY REPORT**

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Metal Limitation: 120,000 tons of metal/year
[Conditions D.3.1(a), D.4.1(b), D.4.1(c), D.5.1(a), and D.5.1(b)]

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	Metal Handling Electric Induction Furnaces Floor/Pouring and Cooling Shakeout Pre-finish Knock out Core Removal Grinding Stations Shotblast Machine			
	Metal Handling Electric Induction Furnaces Floor/Pouring and Cooling Shakeout Pre-finish Knock out Core Removal Grinding Stations Shotblast Machine			
	Metal Handling Electric Induction Furnaces Floor/Pouring and Cooling Shakeout Pre-finish Knock out Core Removal Grinding Stations Shotblast Machine			

Form Completed By:
Title/Position:
Date:
Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

ROTARY KILN CHIPS METAL LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Chips Metal Limitation: 120,000 tons of chips/year [Condition D.3.1(d)]

Reporting Year:			
Month	This month (tons/month)	Previous 11 Months	12 Month Total (tons/year)

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

FLOOR MOLD WASH LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Floor Mold Wash Limitation: 1.49 tons of VOC floor mold wash/year [Condition D.4.1(a)]
17,520 gallons of floor mold wash/year at 0.17 pounds of VOC/gallon

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of mold wash			
	tons of VOC			
	gallons of mold wash			
	tons of VOC			
	gallons of mold wash			
	tons of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

FILLER PUTTY LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Filler Putty Limitation: 438 pounds of VOC filler putty/year [Condition D.6.1(a)]
8,760 tons of filler putty/year at 0.05 pounds of VOC/gallon

Reporting Year:				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of filler putty			
	pounds of VOC			
	gallons of filler putty			
	pounds of VOC			
	gallons of filler putty			
	pounds of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

PRIMER LIMITATION QUARTERLY REPORT

Source Name: North Vernon Industry Corporation
Source Location: 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address: [P.O. Box 894, North Vernon, IN 47265](#)
SSM Permit: 079-17819-00018
Primer Limitation: 38 tons of VOC primer/year (total) [Condition D.6.1(b)]
Paint Booth 1 and Paint Booth 2

Reporting Year:				
Paint Booth 1 and Paint Booth 2				
Month	Units	This month	Previous 11 Months	12 Month Total
	gallons of primer			
	tons of VOC			
	gallons of primer			
	tons of VOC			
	gallons of primer			
	tons of VOC			

Form Completed By:

Title/Position:

Date:

Telephone:

A certification by the responsible official as defined by 326 IAC 2-7-1(34) is required for this report.

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document Addendum (TSDA) for a
Part 70 Significant Source Modification (SSM)**

Source Background and Description

Source Name:	North Vernon Industry Corporation
Source Location:	3750 North CR 75 West, North Vernon, IN 47265
Mailing Address:	P.O. Box 894, North Vernon, IN 47265
General Telephone Number:	812/346-8772
General Facsimile Number:	812/346-9181
Responsible Official:	Vice President (Jack Bodi)
County Location:	Jennings
SIC Code:	3321 (Gray Iron Foundry)
Source Categories:	1 of 28 Listed Source Categories Existing PSD Minor Source Major PSD Source, after this modification Major Source, CAA Section 112, after this modification
Significant Source Modification:	079-17819-00018
Permit Reviewer:	Iryn Calilung

Public Notification

On September 29, 2003, the Office of Air Quality (OAQ) had a notice published in the Plain Dealer and Sun newspaper, North Vernon, Indiana that North Vernon Industry Corporation (NVIC) had applied for an air approval to modify their existing gray iron foundry.

The public comment period ended on October 28, 2003.

Comments Received

On October 28, 2003, comments were received from August Mack Environmental, Inc., on behalf of NVIC.

The comments are re-stated in the following pages with the IDEM responses. The comments have been compiled by Section Ds. Any changes to the draft permit are shown in ~~strikeout~~ or **bold** fonts to show the difference.

The IDEM does not amend the TSD and its Appendices, but instead uses this TSD addendum to clarify or correct errors. The TSD is maintained to document the original review and the TSD Addendum is made to document the changes from the time the permit is drafted until a final decision is made.

Comments regarding this permit in no way demonstrate that the draft permit failed to meet the requirements for a permit. The purpose of the 30-day public comment period is to allow anyone the opportunity to review and comment if they believe there is a problem or concern with the permit. This TSD addendum will address those concerns, and if necessary, amend or deny the drafted permit. In many instances, the IDEM has amended the permit and that has satisfied both the State and Federal permitting programs.

Source General Information

- (1) Please revise the source address on page 1 of the permit to read as follows: 3750 North CR 75 West, North Vernon, IN 47265.
- (2) Please revise the source location stated in Section A.1 of the permit and on all the reporting forms located in the permit to read as follows: 3750 North CR 75 West, North Vernon, IN 47265.
- (3) Please revise the mailing address stated in Section A.1 of the permit and on all the reporting forms located in the permit to read as follows: P.O. Box 894, North Vernon, IN 47265.
- (4) Please revise the general facsimile number listed in Section A.1 to read as follows: 812-346-9181.

IDEM Response

The application submitted has the correct address: 3750 North CR 75 West, North Vernon, IN.

Source Name:	North Vernon Industry Corporation
Source Location:	37350 3750 North CR 75 West, North Vernon, IN 47265
Mailing Address:	37350 North CR 75 West, North Vernon, IN 47265 P.O. Box 894, North Vernon, IN 47265
General Telephone Number:	812/346-8772
General Facsimile Number:	812/346- 6573 9181

The same changes are made to the front cover of the permit, reporting forms and the Affidavit of Construction.

Section D.1 CORE MAKING OPERATIONS
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(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Core Making Operations

- (1) A core sand handling system with a maximum capacity of 750 pounds of sand per hour, and the uncontrolled emissions exhausting inside the building.
- (2) A core machine with a maximum capacity of 0.052 pounds of resin per pound of sand and 750 pounds of sand per hour; and, the uncontrolled emissions exhausting inside the building.
- (3) A core wash with a maximum capacity to emit 11.88 pounds of VOCs per hour and the uncontrolled emissions exhausting inside the building.
- (4) NVIC is requesting that the reference to the butane torch be made under the Miscellaneous Emission Units. In Section A.2(A)(4), please relocate the core machine butane torch to the Miscellaneous Emission Units listing in Section A.2(G). The maximum firing rate of the butane torch is less than 6.0 million BTU per hour and therefore meets the definition of an insignificant activity pursuant to 326 IAC 2-7-1(21) and 326 IAC 2-8-3(c)(3)(I).

IDEM Response

The IDEM is making the changes regarding the maximum capacity of the core making operations.

These emission units were arranged based on the process flow diagram provided as part of the application. The TSD indicated that the emission units were grouped together in terms of the significant operations to which they belong. Emission units could be insignificant on their own; however, they are considered part of the significant/main operations to process/finish/produce a product. Based on this, the butane torch is maintained to be under the Core Making Operations.

CORE MAKING OPERATIONS

- (1) A raw core sand handling and storage **system**, with a maximum capacity of ~~626~~ **750** pounds of sand per hour, and the uncontrolled emissions exhausting inside the building.
- (2) A core machine with a maximum capacity 0.052 pounds of resin **per pound of sand ceramic beads**, and ~~626~~ **750** pounds of sand per hour; and the uncontrolled emissions exhausting inside the building.
- (3) A core wash with a maximum capacity **to emit of 40** ~~11.88~~ pounds of VOC per hour and the uncontrolled emissions exhausting inside the building.
- (4) A butane torch is use to flash off excess core wash. This torch has a maximum firing rate of 0.36 gallons per hour and 6 MMBTU/hour, and the uncontrolled emissions exhausting inside the building.

(2) PSD Minor Limitations

In Section D.1.1(a) and (b), please update the PSD Minor Limitations as follows:

- (a) The core sand usage shall not exceed 2,000 tons of core sand per 12-consecutive month period with compliance demonstrated at the end of each month. The particulate emissions shall not exceed the rate of 3.60 pounds of PM per ton of core sand and 0.54 pounds of PM10 per ton of core sand.
- (b) The core resin usage shall not exceed 2.83 tons of VOCs per 12-consecutive month period with compliance demonstrated at the end of each month. This is equivalent to 5,000 gallons of core resin per year at 1.13 pounds of VOCs per gallon.

IDEM Response

IDEM agrees.

- D.1.1(a) The raw core sand ~~used~~ **usage** shall not exceed 2,000 tons of **core** sand per 12-consecutive month period, with compliance demonstrated at the end of each month.
The particulate emissions shall not exceed the rate of 3.60 pounds of PM per ton of **core** sand and 0.54 pounds of PM10 per ton of **core** sand.
- D.1.1(b) The core resin usage shall not exceed ~~2.80~~ **2.83** tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
This is equivalent to 5,000 gallons of core resin per year at 1.13 pounds of VOC per gallon.

(3) Core Sand Handling Particulate

In Section D.1.2, please update the particulate emission limitations for the core sand handling operations to read as follows:

Shall not exceed 2.13 pounds per hour when operating at a process weight rate of 750 pounds per hour.

IDEM Response

Based on the latest information regarding the maximum capacity of the units, the particulate allowable emission rate is changed accordingly as shown in the equation:

$$E = 4.1[(750 \text{ lb/hr})/(1 \text{ ton}/2000 \text{ lb})]^{0.67} = 2.13 \text{ lb/hour}$$

- D.1.2 Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the raw core sand handling shall not exceed ~~4.88~~ **2.13** pounds per hour when operating at a process weight rate of ~~626~~ **750** pounds per hour.

Section D.2 Mold Making Operations
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(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Mold Making Operations

- (1) A mold sand handling system with a maximum capacity of 165 tons of sand per hour, and the particulate emissions controlled by Baghouse 2.
- (2) A molding machine with a maximum capacity of 165 tons of sand per hour, 1.0 pound of plastic per hour and 0.924 pounds of release agent VOCs per hour, and the uncontrolled emissions exhausting inside the building.
- (3) A mold wash with a maximum capacity of 1.20 pounds of mold wash VOCs per hour, and the uncontrolled emissions exhausting inside the building.
- (4) NVIC is requesting that the reference to the mold machine dryers be made under the Miscellaneous Emission Units. In Section A.2(B)(4), please relocate the two natural gas fired mold machine dryers to the Miscellaneous Emission Units listing in Section A.2(G). The maximum firing rate of the two natural gas fired mold machines dryers are less than 10.0 million BTU per hour and therefore meet the definition of an insignificant activity pursuant to 326 IAC 2-7-1(21) and 326 IAC 2-8-3(c)(3)(l).

IDEM Response

IDEM is making the changes on the maximum capacities of the Mold Making Operations.

These emission units were arranged based on the process flow diagram provided as part of the application. The TSD indicated that the emission units were grouped together in terms of the significant operations to which they belong. Emission units could be insignificant on their own; however, they are considered part of the significant/main operations to process/finish/produce a product. Based on this, the mold machine dryers are maintained to be under the Mold Making Operations.

MOLD MAKING OPERATIONS

- (1) A raw mold sand handling and storage **system**, with a maximum capacity of ~~437.5~~ **165.0** tons of sand per hour, and a dust collector (identified as Baghouse 2) for particulate control.
- (2) A molding machine with a maximum capacity of ~~137.5~~ **165.0** tons of sand per ~~year-hour~~, ~~1.50~~ pounds of plastic per hour, and ~~0.77~~ **0.924** pounds of release agent VOC per hour; and the uncontrolled emissions exhausting inside the building.
- (3) A mold wash with a maximum capacity of ~~0.884~~ **1.20** pounds of **mold** wash VOC per hour, and the uncontrolled emissions exhausting inside the building.

- (4) Two (2) natural gas fired mold machine dryers, identified as 1 and 2, each rated at 0.00113 million (MM)BTU per hour, and the uncontrolled emissions exhausting inside the building.

(2) PSD Minor Limitations

In Section D.2.1, please update the PSD Minor Limitations as follows:

- (a) Since the mold sand handling and shakeout operations are controlled by the same baghouse, the mold sand handling operations will not require an annual limitation since the emission calculations are based on the quantity of metal processed through the shakeout operations. Please remove this requirement from the permit.
- (b) The plastic applied in the molding operations will not require an annual limitation since the emission calculations have been modified to reflect maximum capacity for this operation. Therefore, this section should be rephrased as follows: The mold plastic usage shall not exceed 0.83 tons of VOCs per 12-consecutive month period, with compliance demonstrated at the end of each month. This is equivalent to 8,760 pounds of plastic which is 19% volatile.
- (c) The mold release agent usage shall not exceed 4.40 tons of VOCs per 12-consecutive month period, with compliance demonstrated at the end of each month. This is equivalent to 2,000 gallons of release agent per year at 4.40 pounds of VOCs per gallon.
- (d) The mold wash usage shall not exceed 5.26 tons of VOCs per 12-consecutive month period with compliance demonstrated at the end of each month. This is equivalent to 62,200 gallons of mold wash per year at 0.17 pounds of VOCs per gallon.

IDEM Response

Due to the changes in maximum capacities of the units involved in the expansion, the limitations necessary to make the proposed modification a PSD minor are changed accordingly.

Each operation's emissions have to be taken into account whether a control is common to several operations. Taking into account the emissions means that a separate limit has to be specified.

- D.2.1 (a) The raw mold sand ~~used~~ **usage** shall not exceed ~~860,400~~ **1,445,400** tons of sand per 12-consecutive month period, with compliance demonstrated at the end of each month.

Since Baghouse 2 controls both the:

- mold sand handling system (Section D.1) and**
- shakeout system (Section D.4),**

the total particulate emissions from Baghouse 2 shall not exceed the rate of 4.20 pounds of PM per ton of metal and 3.75 pounds of PM10 per ton of metal.

- (b) The mold plastic usage shall not exceed 0.83 ton of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.

This is equivalent to **the maximum capacity of 9,400 8,760 pounds of plastic** per 12-consecutive month period at 19% volatile.

- (c) The mold release agent usage shall not exceed ~~2.41~~ **4.40** tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.

This is equivalent to ~~1,095~~ **2,000** gallons of release agent per year at 4.40 pounds of VOC per gallon.

- (d) The mold wash usage shall not exceed ~~6.92~~ **5.26** tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.

This is equivalent to ~~81,400~~ **62,200** gallons of mold wash per year at 0.17 pounds of VOC per gallon.

(3) Mold Sand Handling Particulate

In Section D.2.2, please update the particulate emission limitations for the mold sand handling operations to read as follows:

Shall not exceed 56.54 pounds per hour when operating at a process weight rate of 165.00 tons per hour.

IDEM Response

Since the maximum capacities have been revised, the particulate allowable emission rate of the mold machine sand handling system also changed. The revised emission rate is:

$$E = 0.55(P^{0.11}) - 40 = 0.55(165^{0.11}) - 40 = 56.44 \text{ lb/hour}$$

D.2.2 Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the mold machine sand handling shall not exceed ~~54.53~~ **56.44** pounds per hour when operating at a process weight rate of ~~137.5~~ **165.00** tons per hour.

(4) Mold Plastic

In Section D.2.11(c) and D.2.12(a), please refer to the plastic utilized in the mold making operations as mold plastic.

IDEM Response

The changes have been made.

D.2.11(c) The Permittee shall maintain records of the actual amount of mold plastic ~~resin~~ used. Records shall be taken monthly and shall be complete and sufficient to establish compliance with the mold plastic ~~resin~~ usage limitations. Records shall include purchase orders and invoices necessary to verify the amount used.

D.2.12(a) The Permittee shall submit a quarterly report of the actual amount of mold sand, mold plastic ~~resin~~, mold release agent and mold wash used, using the Quarterly production Report, or its equivalent.

Section D.3 Melting Operations

(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Melting Operations

- (1) A charge handling system utilizing mechanical conveyors and magnetic overhead cranes with a maximum capacity of 18 tons of metal per hour, and the uncontrolled emissions exhausting inside the building.
- (2) Three electric induction furnaces, identified as 1, 2 and 3, each rated at 6 tons of metal per hour with a donut hood exhausting to Baghouse 1 for particulate control.
- (3) A natural gas fired 20 mmBTU/hour single chamber rotary kiln dryer with a maximum rate of 18 tons of metal per hour with the particulate emissions controlled by Baghouse 1. This rotary kiln dryer is used to evaporate coolants off the metal prior to melting. NVIC decided not to install an afterburner to the kiln dryer because the VOCs emissions are minimal.
- (4) NVIC is requesting that the reference to the ladle be made under the Miscellaneous Emission Units. In Section A.2(C)(4), please relocate the natural gas fired preheater to the Miscellaneous Emission Units listing in Section A.2(G). The maximum firing rate of the natural gas fired preheater is less than 10.0 million BTU per hour and therefore meets the definition of an insignificant activity pursuant to 326 IAC 2-7-1(21) and 326 IAC 2-8-3(c)(3)(I).

IDEM Response

The application submitted in NVIC in June, 2003 has a project expansion of 15 tons/hour rate to their existing plant. Based on the comments above, the proposed expansion is now an 18 ton/hour rate project.

IDEM will be making the changes.

These emission units were arranged based on the process flow diagram provided as part of the application. The TSD indicated that the emission units were grouped together in terms of the significant operations to which they belong. Emission units could be insignificant on their own; however, they are considered part of the significant operations to process/finish/produce a product. Based on this, the ladle is maintained to be under the Melting Operations.

MELTING OPERATIONS

- (1) ~~A metal and~~ charge handling **system utilizing by** mechanical conveyors **and magnetic overhead cranes**, with maximum capacity of ~~45~~ **18** tons of metal per hour, and the uncontrolled emissions exhausting ~~directly to the atmosphere~~ **exhausting inside the building.**

- (2) ~~Two (2)~~ **Three (3)** electric induction furnaces, identified as 1, ~~and 2,~~ and 3, each rated at ~~15 6~~ tons of metal per hour, and with a donut hood exhausting to a dust collector (identified as Baghouse 1) for particulate control.
 - (3) A natural gas fired single chamber rotary kiln dryer with a maximum rate of ~~44.25~~ **18** tons of metal per hour and 7,500 cubic feet/min and 20 MMBTU per hour, with the particulate emissions controlled by Baghouse 1. This rotary kiln dryer is ~~used~~ to evaporate coolants off the metal prior to melting.
NVIC decided not to install an afterburner to the kiln dryer, because the VOC emissions are minimal.
 - (4) A ladle with a natural gas fired preheater, with a maximum capacity of 1 MMBTU per hour, and the uncontrolled emissions exhausting inside the building. This preheater is use to dry the ladle prior to each filing.
- (2) PSD Minor Limitations
In Section D.3.1, please update the PSD Minor Limitations as follows:
- (a) The charge handling system shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month.
 - (b) The particulate emissions from the charge handling system shall not exceed the rate of 0.60 pounds of PM per ton of metal and 0.36 pounds of PM10 per ton of metal.
 - (c) This information is correct.
 - (d) The metal chips used in the rotary kiln dryer shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month.
 - (e) The volatile emissions from the rotary kiln dryer shall not exceed the rate of 0.10 pounds of VOC per ton of metal. (Due to the recent compliance stack testing performed on the existing rotary kiln dryer, NVIC is requesting that the VOC emission factor currently stated in the DRAFT operating permit be updated to 0.10 pounds of VOC per ton of metal processed. A copy of the stack test report is on file with the IDEM OAQ Compliance Data Section.)

IDEM Response

Due to the change in the scope of the expansion, limitations are changed accordingly. In addition, based on the most recent stack test (2003) performed by NVIC, VOC emission rate for the dryer has been specified.

- D.3.1
- (a) ~~The metal and charge handling system used~~ shall not exceed ~~93,900~~ **120,000** tons of metal per 12-consecutive month period, with compliance demonstrated at the end of each month.
 - (b) The particulate emissions from the ~~metal and charging handling system~~ shall not exceed the rate of 0.60 pounds of PM per ton of metal and 0.36 pounds of PM10 per ton of metal.
 - (c) The particulate emissions from the electric induction furnaces shall not exceed the rate of 0.95 pounds of PM per ton of metal chips and 0.86 pounds of PM10 per ton of metal chips.

- (d) The metal chips used in the rotary kiln dryer shall not exceed ~~70,400~~ **120,000** tons metal chips per 12-consecutive month period ~~with 1.4% VOC~~; with compliance demonstrated at the end of each month.
- (e) **The volatile emissions from the rotary kiln dryer shall not exceed the rate of 0.10 pounds of VOC per ton of metal.**

- (3) Charge Handling And Electric Induction Furnace Operations Particulate Emission Limitations
In Section D.3.2, please update the particulate emission limitations for the charge handling and electric induction furnace operations to read as follows:
Shall not exceed 28.43 pounds per hour when operating at a process weight rate of 18 tons per hour.

IDEM Response

Due to the change in the maximum capacity of the charge handling and furnaces, the particulate allowable emission rate is also changed.

$$E = 4.1P^{0.67} = 4.1(18^{0.67}) = 28.43 \text{ lb/hour}$$

- D.3.2 Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the metal and charge handling and electric induction furnace shall not exceed ~~25.46~~ **28.43** pounds per hour when operating at a process weight rate of ~~45~~ **18** tons per hour.

Section D.4

Floor Molding Operations

(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Floor Molding Operations

- (1) A floor mold wash with a maximum capacity of 0.34 pounds of mold wash VOCs per hour and the uncontrolled emissions exhausting inside the building.
- (2) A floor pouring and cooling with a maximum rate of 18 tons of metal per hour; utilizes a vacuum suction during pouring and cooling operations and the controlled emissions are exhausted inside the building.
- (3) A shakeout system with a maximum capacity of 24 tons of metal per hour and the particulate emissions controlled by Baghouse 2.

IDEM Response

IDEM made the changes.

FLOOR MOLDING OPERATIONS

- (1) A floor mold wash with a maximum rate of ~~0.884~~ **0.34** pounds of **floor mold** wash VOC per hour and the uncontrolled emissions exhausting inside the building.
- (2) A floor pouring and cooling, with a maximum rate of ~~45~~ **18** tons of metal per hour and 0.17 pounds of release agent VOC; ~~utilizes~~ **utilizing** a vacuum suction during **pouring and cooling operations**, and the controlled emissions exhausting inside the building.
- (3) A shakeout unit/**system** for casting operation, with a maximum rated ~~of at 20~~ **24** tons of metal per hour, and the particulate emissions controlled by Baghouse 2. Baghouse 2 will recycle all the sand collected back into the mold sand process. Baghouse 2 is the same dust collector in the raw mold sand handling and storage.

(2) PSD Minor Limitations

In Section D.4.1, please update the PSD Minor Limitations as follows:

- (a) The floor mold wash usage shall not exceed 1.49 tons of VOC per 12-consecutive month period with compliance demonstrated at the end of each month. This is equivalent to 17,520 gallons of floor mold wash per year at 0.17 pounds of VOC per gallon.
- (b) The metal used in the floor pouring and cooling shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month. The particulate emissions shall not exceed the rate of 0.10 pounds of PM per ton of metal and 0.10 pounds of PM10 per ton of metal.
There is only a slight puffing when the molten metal burns through the plastic sheets used as part of the vacuum process. NVIC has estimated a worst-case value of 0.10 pounds of PM/PM10 per ton of metal. Since the IDEM has requested that the pouring/cooling

operations demonstrate compliance with the particulate emission limitations as stated in Section D.4.2, NVIC is requesting that this worst-case emission factor of 0.10 pounds of PM/PM10 per ton of metal be applied to the pouring/cooling operations.

- (c) The metal used in the shakeout shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month. The particulate emissions shall not exceed the rate of 4.2 pounds of PM per ton of metal and 3.75 pounds of PM10 per ton of metal.

IDEM Response

Material usage and production limitations are changed due to the changes in rates of the units.

- D.4.1 (a) The floor mold wash usage shall not exceed ~~7~~ **1.49** tons of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
This is equivalent to ~~81,400~~ **17,520** gallons of floor mold wash per year at 0.17 pounds of VOC per gallon.
- (b) The metal used in the floor pouring and cooling shall not exceed ~~93,900~~ **120,000** tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month.
~~This is equivalent to zero PM and PM10 emissions because of the vacuum system.~~ **The particulate emissions shall not exceed the rate of 0.10 pounds of PM per ton of metal and 0.10 pounds of PM10 per ton of metal.**
- (c) The metal used in the shakeout **system** shall not exceed ~~93,900~~ **120,000** tons of metal per 12-consecutive month period, with compliance demonstrated at the end of each month.

Since Baghouse 2 controls both the:

- **mold sand handling system (Section D.1) and**
- **shakeout system (Section D.4),**

the total particulate emissions from Baghouse 2 shall not exceed the rate of 4.20 pounds of PM per ton of metal and 3.75 pounds of PM10 per ton of metal.

(3) Floor Pouring/Cooling Operations Particulate Emission Limitations

In Section D.4.2, please update the particulate emission limitations for the floor pouring/cooling operations to read as follows:

Shall not exceed 57.57 pounds per hour when operating at a process weight rate of 18 tons of metal and 165.38 tons of mold and core sand per hour.

IDEM Response

The particulate based on the equation shown below is changed according with the revised capacity of the units.

Initial PWR:

$$P = (15 \text{ tons of metal/hour}) + (137.5 \text{ tons of molding sand/hour}) + (0.313 \text{ tons of core sand/hour}) \\ = 152.81 \text{ tons/hour}$$

Revised PWR:

$$P = (18 \text{ tons of metal/hour}) + (165.38 \text{ tons of mold and core sand/hour}) = 183.38 \text{ tons/hour}$$

$$E = 55P^{0.11} - 40 = 55(183.38^{0.11}) - 40 = 57.57 \text{ lb/hour}$$

D.4.2(a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the floor pouring/cooling shall not exceed ~~55.64~~ **57.57** pounds per hour when operating at a process weight rate of ~~152.84~~ **18 tons of metal and 165.38 tons of mold and core sand** per hour.

(4) Shakeout Operations Particulate Emission Limitations

Please update the particulate emission limitations for the shakeout operations to read as follows:

Shall not exceed 60.71 pounds per hour when operating at a process weight rate of 24 tons of metal and 220.50 tons of mold and core sand per hour.

IDEM Response

The particulate based on the equation shown below is changed according with the revised capacity of the units.

Initial PWR:

$$P = (20 \text{ tons of metal/hour}) + (183.33 \text{ tons of molding sand/hour}) + (1.04 \text{ tons of core sand/hour}) \\ = 204.37 \text{ tons/hour}$$

Revised PWR:

$$P = (24 \text{ tons of metal/hour}) + (220.50 \text{ tons of mold and core sand/hour}) = 244.5 \text{ tons/hour}$$

$$E = 55P^{0.11} - 40 = 55(244.5^{0.11}) - 40 = 60.71 \text{ lb/hour}$$

D.4.2(b) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the shakeout unit shall not exceed ~~58.74~~ **60.71** pounds per hour when operating at a process weight rate of ~~204.37~~ **24 tons of metal and 220.50 tons of mold and core sand** tons per hour.

(5) Visible Emission Notations Of The Floor Pouring/Cooling Operations

In Section D.4.6, please clarify at which exhaust point(s) the IDEM wants visible emission notations of the floor pouring/cooling operations taken. The vacuum system is operated through the use of air compressors. Therefore, there will be no visible emissions at the vacuum system exhaust point assuming this refers to the air compressors.

IDEM Response

Since the emissions from the floor pouring and cooling operations do not exhaust directly to the atmosphere, the visible emission notation requirements is not necessary.

D.4.6(a) Visible emission notations of the:

- (i) Baghouse 2 stack exhaust and
- (ii) ~~Floor pouring/cooling vacuum system exhaust~~

shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

Corresponding record keeping will also be eliminated.

Section D.5 Pre-Finishing Operations
--

(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Pre-Finishing Operations

- (1) A pre-finish knock out area with a maximum capacity of 24 tons of metal per hour and the particulate emissions controlled by Baghouse 4.
- (2) An enclosed shotblast machine using steel shot as media with a maximum capacity of 24 tons of metal per hour and the particulate emissions controlled by Baghouse 3.
- (3) A core removal operation with a maximum capacity of 24 tons of metal per hour and the uncontrolled emissions are exhausted inside the building.
- (4) A coarse grinding area with a maximum capacity of 24 tons of metal per hour and the particulate emissions controlled by Baghouse 4.

IDEM Response

IDEM is making the changes.

PRE-FINISHING OPERATIONS

- (1) A pre-finish knock out station/**area**, consisting of three (3) sanders, with a maximum capacity of ~~20~~ **24** tons of metal per hour, and ~~a~~ dust collector (identified as Baghouse 4) for particulate control.
- (2) An enclosed shotblast machine, using steel shot ~~at~~ **as** media, with a maximum capacity of ~~20~~ **24** tons of metal per hour, with a dust collector (identified as Baghouse 3), rated at 0.03 grain per acfm outlet loading, for particulate control.
- (3) A core removal operation, rated at ~~20~~ **24** tons of metal per hour, will remove the remaining sand cores from the casting, and the uncontrolled emissions exhausting ~~directly to the atmosphere~~ **inside the building**.
- (4) **A coarse grinding area consisting of** five (5) coarse grinding stations, identified as 1, 2, 3, 4, and 5, ~~each rated at~~ **with a maximum capacity of 20 24** tons of metal per hour, and the particulate emissions controlled by Baghouse 4.

(2) PSD Minor Limitations

In Section D.5.1, please update the PSD Minor Limitations as follows:

- (a) The metal used in the pre-finish knock out area, core removal operation and coarse grinding area shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month. The particulate emissions shall not exceed the rate of 0.75 pounds of PM per ton of metal and 2.00 pounds of PM10 per ton of metal.

- (b) The metal used in the shotblast machine shall not exceed 120,000 tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month. The particulate emissions shall not exceed the rate of 0.75 pounds of PM per ton of metal and 0.60 pounds of PM10 per ton of metal.

IDEM Response

Due to the change in specifications of the operations, limitations to assure PSD minor modification have also been revised.

- D.5.1(a) The metal used in the pre-finish knock out station/~~area~~, core removal ~~operation~~, and ~~coarse~~ grinding stations shall not exceed ~~93,900~~ **120,000** tons of metal per 12-consecutive month period with compliance demonstrated at the end of each month.
The particulate emissions shall not exceed the rate of 0.75 pounds of PM per ton of metal and 2.00 pounds of PM10 per ton of metal.
- (b) The metal used in the shotblast machine shall not exceed ~~93,900~~ **120,000** tons of metal per 12-consecutive month period, with compliance demonstrated at the end of each month.
The particulate emissions shall not exceed the rate of 0.75 pounds of PM per ton of metal and 0.60 pounds of PM10 per ton of metal.

(3) Pre-Finish Knock Out Area, Shotblast Machine, Core Removal Operation And Coarse Grinding Area Operations Particulate Emission Limitations

In Section D.5.2, please update the particulate emission limitations for the pre-finish knock out area, shotblast machine, core removal operation and coarse grinding area operations to read as follows:

Shall not exceed 34.48 pounds per hour when operating at a process weight rate of 24 tons of metal per hour.

The process weight rate is less than 60,000 pounds per hour; therefore, the improper equation was listed in the DRAFT permit. Please update accordingly.

IDEM Response

The corrections have been made.

$$E = 4.10P^{0.67} = 4.1(24^{0.11}) = 34.48 \text{ lb/hour}$$

- D.5.2 Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the pre-finish knock out station, shotblast machine, core removal and grinding stations shall each not exceed ~~55.98~~ **34.48** pounds per hour when operating at a process weight rate of ~~20~~ **24** tons per hour.

~~Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by the use of the following equation:~~

$$E = (55)(P^{\frac{-0.11}{-0.11}}) - 40$$

~~where: E = rate of emissions in pounds per hour, and
P = process weight rate in tons per hour.~~

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 4.10P^{0.67}$$

**where: E = rate of emissions in pounds per hour, and
P = process weight rate in tons per hour.**

Section D.6 Finishing Operations

(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Finishing Operations

- (1) Filler/putty application with a maximum rate of 0.05 pounds of VOCs per hour and with emissions exhausting inside the building.
- (2) Two spray paint booths identified as 1 and 2 with paper filters for particulate control.
 - (i) Paint booth 1 has a maximum capacity of 9.5 pounds of primer VOCs per hour.
 - (ii) Paint booth 2 has a maximum capacity of 10.5 pounds of primer VOCs per hour.
- (3) NVIC is requesting that the reference to the paint booth dryers be made under the Miscellaneous Emission Units. In Section A.2(F)(3), please relocate the natural gas fired paint booth dryers to the Miscellaneous Emission Units listing in Section A.2(G). The maximum firing rate of the natural gas fired paint booth dryers are less than 10.0 million BTU per hour and therefore meet the definition of an insignificant activity pursuant to 326 IAC 2-7-1(21) and 326 IAC 2-8-3(c)(3)(I).
- (4) A buffing booth with a maximum capacity of 24 tons of metal per hour and the particulate emissions controlled by Baghouse 5.
- (5) A putty booth with a maximum capacity of 24 tons of metal per hour and the particulate emissions controlled by Baghouse 4.

IDEM Response

These emission units were arranged based on the process flow diagram provided as part of the application. The TSD indicated that the emission units were grouped together in terms of the significant operations to which they belong. Emission units could be insignificant on their own; however, they are considered part of the significant/main operations to process/finish/produce a product. Based on this, the paint booth dryers are maintained to be under the Finishing Operations.

FINISHING OPERATIONS

- (1) Filler/putty application to the casting to fill in any divots or scratches, with a maximum rate of 0.05 pounds of VOC per hour for the entire finishing operations and with emissions exhausting inside the building.
- (2) ~~Three (3)~~ **Two (2)** spray paint booths, identified as 1, and 2, ~~and 3~~, each utilizes an air spray gun, each with paper filters for particulate control.
 - (i) Paint booth 1 has a maximum capacity of ~~2-83~~ **9.5** pounds of primer VOC per hour.
 - (ii) Paint booth 2 has a maximum capacity of ~~9.5~~ **10.5** pounds of primer VOC per hour.
 - ~~(iii) Paint booth 3 has a maximum capacity of 10.5 pounds of primer VOC per hour.~~

- (3) ~~Three (3)~~ Two (2) paint booth dryers using natural gas as fuel, each rated at 0.0014125 MMBTU per hour, and the uncontrolled emissions exhausting directly to the atmosphere.
 - (4) A buffing booth containing three (3) fine grinders or buffers, with a maximum capacity of ~~20~~ **24** tons of metal per hour, and a dust collector (identified as Baghouse 5) for particulate control.
 - (5) A putty booth used for additional repair, **with a maximum capacity of 24 tons of metal per hour**, and the particulate emissions are controlled by Baghouse 4. Baghouse 4 is the same dust collector in the pre-finish knock off station and grinders.
 - ~~(6) A final inspection paint booth with a maximum capacity of 3.75 pounds of VOC primer per hour, and the uncontrolled emissions exhausting inside the building.~~
 - ~~(7) A final inspection buffing station with a maximum capacity of 20 tons of metal per hour, and the particulate emissions controlled by Baghouse 5.~~
- (2) PSD Minor Limitations
In Section D.6.1, please update the PSD Minor Limitations as follows:
- (a) The filler/putty used in the entire finishing operations shall not exceed 438 pounds of VOC per 12-consecutive month period with compliance demonstrated at the end of each month. This is equivalent to 8,760 gallons of filler/putty per year at 0.05 pounds of VOCs per gallon.
 - (b) The primer used in Paint Booth 1 shall not exceed 14.00 tons of VOCs per 12-consecutive month period with compliance demonstrated at the end of each month.
 - (c) The primer used in Paint Booth 2 shall not exceed 24.00 tons of VOCs per 12-consecutive month period with compliance demonstrated at the end of each month.
- IDEM Response
Since no individual VOC limit has to be specified to each paint booth, a total VOC limit has been specified to provide the Permittee the flexibility.
- D.6.1 (a) The filler/putty used in the entire Finishing Operations shall not exceed ~~315~~ **438** pounds of VOC per 12-consecutive month period, with compliance demonstrated at the end of each month.
- This is equivalent to ~~6,300~~ **8,760** gallons of filler/putty per year at 0.05 pounds of VOC per gallon.
- (b) The primer used in Paint booth 1 **and** Paint booth 2, ~~Paint booth 3 and Final inspection paint booth~~ shall not exceed ~~74~~ **38** tons of VOC pounds per 12-consecutive month period, with compliance demonstrated at the end of each month.
- (3) Paint Booths
Please update Section D.6.3, D.6.5, D.6.6, D.6.8 and D.6.12 to state that only Paint Booth 1 and 2 will be installed.

IDEM Response

All of the above mentioned Conditions have been revised. To illustrate, Condition D.6.3 was revised as follows:

D.6.3 Pursuant to 326 IAC 8-2-9(f), all solvents sprayed from the application equipment of Paint booth 1 **and** Paint booth 2, ~~Paint booth 3 and Final inspection paint booth~~ during clean up or color changes shall be directed into containers. Such containers shall be closed as soon as the solvent spraying is complete. In addition, all waste solvent shall be disposed of in such a manner that minimizes evaporation.

(4) Buffing Booth Operations Particulate Emissions

In Section D.6.4, please update the particulate emission limitations for the buffing booth operations to read as follows:

Shall not exceed 34.48 pounds per hour when operating at a process weight rate of 24 tons of metal per hour.

The process weight rate is less than 60,000 pounds per hour; therefore, the improper equation was listed in the DRAFT permit. Please update accordingly.

IDEM Response

The revised particulate allowable emission rate is as follows:

$$E = 4.1 P^{0.67} = 4.1 (24^{0.67}) = 34.48 \text{ lb/hour}$$

D.6.4 Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission from the buffing booth ~~and final inspection buffing station~~ shall ~~each~~ not exceed ~~55.98~~ **34.48** pounds per hour when operating at a process weight rate of ~~20~~ **24** tons per hour.

~~Interpolation and extrapolation of the data for the process weight rate in excess of 60,000 pounds per hour shall be accomplished by the use of the following equation:~~

$$E = (55)(P^{0.41}) - 40 \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by the use of the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emissions in pounds per hour, and} \\ P = \text{process weight rate in tons per hour.}$$

Section D.7 Miscellaneous Emission Units

(1) Emission Units

As NVIC moves closer to beginning installation of the various pieces of new equipment, equipment manufacturers and NVIC have been able to obtain more accurate information regarding the equipment such as maximum capacities for each of these units. As a result, NVIC is providing a revised list of the new equipment and the more refined maximum capacities that are associated with each of these units. Please update Section A and D accordingly.

Miscellaneous Emission Units

- (1) Two emergency generators identified as 1 and 2 each rated at 3.07 gallons of diesel fuel no. 2 per hour (125 kilowatts).
- (2) Eight natural gas fired air make up units identified as 1, 2, 3, 4, 5, 6, 7 and 8 each rated at 4.34 mmBTU/hour.
- (3) Four natural gas fired space heaters identified as 1, 2, 6 and 7 each rated at 0.3 mmBTU/hour.
- (4) Six natural gas fired space heaters identified as 3, 4, 5, 8, 9 and 10 each rated at 1.125 mmBTU/hour.
- (5) Two natural gas fired water heaters identified as 1 and 2 each rated at 0.199 mmBTU/hour.
- (6) A maintenance department parts washing station rated at 0.002 gallons of parts wash solution per hour and 0.4 pounds of VOCs per gallon.
- (7) Paved roads.

IDEM Response

These units have been considered Miscellaneous Emissions Units and also classified as Insignificant activities because they are units that are not necessarily part of the main operations. They have independent and different functions at the plant and not specifically related to the production.

MISCELLANEOUS EMISSION UNITS

- (1) Two (2) emergency generators, identified as 1 and 2, each is rated at 3.07 gallons of diesel fuel no. 2 per hour (125 kilowatts).
- (2) ~~Seven (7)~~ **Eight (8)** natural gas fired air make up units, identified as 1, 2, 3, 4, 5, 6, ~~and 7,~~ **and 8**; each rated at ~~5.28~~ **4.34** MMBTU/hour.
- (3) Four (4) natural gas fired space heaters, identified as 1, 2, 6, and 7; each rated at 0.3 MMBTU per hour.
- (4) Six (6) natural gas fired space heaters, identified as 3, 4, 5, 8, 9 and 10; each rated at 1.125 MMBTU per hour.
- (5) Two (2) natural gas fired water heaters, identified as 1 and 2; each rated at 0.199 MMBTU per hour.
- (6) A Maintenance Department parts washing station, rated at 0.002 gallons of parts wash solution per hour, with estimated ~~4.4% volatile~~ **0.4 pounds of VOC per gallon**.

(7) Paved roads.

(2) Emergency Generators

In Section D.7.1 and D.7.5, please remove the emergency generators requirement to operate no more than 500 hours per 12-consecutive month period. These units meet the definition of an insignificant activity per 326 IAC 2-7-1(21) and 326 IAC 2-8-3(c)(3)(I). Therefore, no emission limitations and standards and record keeping requirements should be applicable to this operation.

Please explain the operating limitations on the emergency generators. The TSD did not have any verbiage to explain why this requirement is necessary. Is there a 326 IAC *** requirement that is associated with these operations? The permit didn't state a regulation next to the header on D.7.1.

IDEM Response

Emergency generators are used to provide back up when power is interrupted. This is the basic definition of an emergency generator as specified in an USEPA letter dated September 6, 1995. This letter also explained that the worst case estimate of the number of hours that may be considered in the PTE determination of an emergency generator is 500 hour/year. These restrictions in the usage and hours of operations are necessary to assure that this proposed modification is a PSD minor modification.

326 IAC 2-7-1(21) took into consideration that emergency generator's PTE is determined at 500 hour/year, thus, they were considered insignificant activities.

Being considered an insignificant activity does not exempt a unit or operation from specific applicable requirements. There are insignificant activities that have specific standards, limitations, monitoring, record keeping and reporting. Another example of insignificant activities that may have specific requirements are degreasing operations.

- - Degreasing are subject to 326 IAC 8-3 even though their PTE are minimal and already considered insignificant activity under 326 IAC 2-7-1(21).

There is no change in the draft permit due to this comment.

General Comments

(1) Typographical Error

Please revise the spelling of “shift” in Sections D.2.11(e)(ii), D.3.10(c)(ii), D.4.11(d)(iii), D.5.9(c)(ii) and D.6.12(d)(ii).

IDEM Response

Correction has been made to the permit for the typographical error from “shit” to “shift”.

(2) Quarterly Reports

Please revise the Quarterly Report Limitations Forms in the DRAFT-operating permit to reflect the information provided above.

IDEM Response

The Quarterly Report Forms and other forms associated with the permit have been revised.

(c) TSD - - PTE Tables

Please update the Potential to Emit Tables 2, 3 and 4 located in the TSD portion of the DRAFT permit to reflect the information provided above. NVIC has provided updated calculation sheets in Attachments A, B, C and D of this submittal. In addition, the PSD significant levels listed in Table 4 should be identical to the levels listed in Table 3. Please adjust accordingly.

IDEM Response

The tables below show the revised PTE before and after control/limit based on the new information provided during the comment period.

Total PTE of the Modification Before Controls/Limits (tons/year)						
Pollutant	PM	PM ₁₀	SO ₂	VOC	CO	NO _x
Expansion	139.31	136.94	5.56	184.29	23.73	29.43

Total PTE of the Modification After Controls/Limits (tons/year)						
Pollutant	PM	PM ₁₀	SO ₂	VOC	CO	NO _x
Expansion	99.77	98.58	5.19	69.41	23.73	29.25

The PSD significant levels indicated in the TSD are correct. They were based on the significant levels specified in 326 IAC 2-2-1(jj)(1)

(4) TSD - HAPs

Please clarify that item (3) on Page 8 of 15 in the TSD portion of the permit refers to hazardous air pollutants.

IDEM Response
Clarification has been made.

The HAPs PTE before and after controls/limitations is greater than 25 tons/year.

(5) Appendix A - - Revised Emission Calculations

Please update Appendix A of the permit with the revised calculations included in Attachments B and C of this comment letter.

IDEM Response

As indicated at the front page of this TSD Addendum, the OAQ does not physically revise the Appendices that accompanied the draft permit for public notice. The revised calculations provided by the applicant will be part of the permit package.

The emissions and limitations of the following operations were based on the 2003 tests results:

--	Rotary Kiln Dryer	(VOC)
--	Electric Induction Furnaces	(PM)
--	Shakeout	(PM and PM10)
--	Pre-Finish Station	(PM and PM10)
--	Shotblast Machine	(PM and PM10)
--	Core Removal Operation	(PM and PM10)
--	Coarse Grinding Stations	(PM and PM10)
--	Buffing Booth	(PM and PM10)
--	Putty Booth	(PM and PM10)

The PTE also took into account the following controls:

--	Baghouse 1	(Electric Induction Furnaces and Rotary Kiln Dryer)
--	Baghouse 2	(Mold Sand Handling System and Shakeout System)
--	Baghouse 3	(Shotblast Machine)
--	Baghouse 4	(Pre-Finish Station, Coarse Grinding Area and Putty Booth)
--	Baghouse 5	(Buffing Booth)
--	Paper Filters	(Paint Booth 1 and Paint Booth 2)
--	Vacuum System	(Floor Pouring and Cooling)

(6) Review

Due to the numerous changes that we have requested, NVIC is asking for another opportunity to review the DRAFT permit prior to final issuance in order to ensure that the necessary changes have been addressed in the permit.

IDEM Response

Prior to the official public comment period, NVIC, through August Mack Environmental, has been provided an opportunity to review the draft permit. August Mack provided comments, and these comments have been incorporated in the draft permit.

IDEM agrees that the changes that NVIC provided during the 30-day comment period are significant, because the comments are not mainly clarifications or corrections. The comments changed the scope of the project, such as different number of units, changes in capacities of the units involved, and the rate of the expansion itself.

IDEM will be providing NVIC another opportunity to examine the permit prior to its issuance.

OAQ Initiated Changes and Clarifications

(1) C.16 (b)(3) Compliance Response Plan - Preparation, Implementation, Records, and Reports

This notification requirement of C.16 (Compliance Response Plan - Preparation, Implementation, Records, and Reports) has been modified to apply to situations where the emissions unit will continue to operate for an extended time while the compliance monitoring parameter is out of range. It is intended to provide the OAQ an opportunity to assess the situation and determine whether any additional actions are necessary to demonstrate compliance with applicable requirements.

C.16(b)(3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be 10 days or more until the unit or device will be shut down, **then the Permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down, the IDEM, OAQ shall be promptly notified of the expected date of the shut down,** the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.

(2) Violation vs. Deviation

This portion of the condition has been clarified to indicate that failure to take response steps is considered a deviation from the permit.

D.2.7(e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan -Preparation, Implementation, Records and Reports, shall be considered a ~~violation of~~ **deviation from** this permit.

The same change has been done in Conditions:

D.2.8, D.2.10(a), D.3.6(e), D.3.7, D.3.9(a), D.4.6(e), D.4.7, D.4.9(a), D.5.5(e), D.5.6, D.5.8(a), D.6.8, D.6.9 and D.6.11(a).

(3) Failure Notification

The Broken or Failed Bag Detection has been revised to provide more flexibility to the Permittee:

D.2.10 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. ~~Operations may continue only if there are no visible emissions or if the event qualifies as an emergency and the Permittee satisfies the emergency provisions of this permit (Section C - Emergency Provisions).~~ Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan -

Preparation, Implementation, Records and Reports, shall be considered a deviation from this permit. **If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.**

The same changes have been made to Conditions:
D.3.9(a), D.4.9(a), D.5.8(a) and D.6.11(a).

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a
Part 70 Significant Source Modification (SSM)**

Source Background and Description

Source Name:	North Vernon Industry Corporation
Source Location:	3730 North CR 75 West, North Vernon, IN 47265
Mailing Address:	3730 North CR 75 West, North Vernon, IN 47265
General Telephone Number:	812/346-8772
General Facsimile Number:	812/346-6573
Responsible Official:	Vice President (Jack Bodi)
County Location:	Jennings
SIC Code:	3321 (Gray Iron Foundry)
Source Categories:	1 of 28 Listed Source Categories Existing PSD Minor Source Major PSD Source, after this modification Major Source, CAA Section 112, after this modification
Significant Source Modification:	079-17819-00018
Permit Reviewer:	Iryn Calilung

History

North Vernon Industry Corporation (NVIC) operates a gray iron foundry that manufactures forklifts counterweights. This source is located in Jennings County. A FESOP application was submitted on October 31, 2001, for the existing portion of the gray iron foundry. The FESOP has not yet been issued and is still under review by the Office of Air Quality (OAQ). The existing gray iron foundry is operating under an air permit (CP 079-5754-00018) issued on August 26, 1996, which limits the potential to emit (PTE) to less than 100 tons/year of emissions, such that PSD requirements do not apply. This gray iron foundry is consider 1 of the 28 listed source categories, specified in 326 IAC 2-2-1(y)(1).

NVIC is proposing to expand their existing gray iron foundry by installing new core making, mold making, melting, floor molding, pre-finishing, finishing and miscellaneous operations to produce the same product (counterweights). The proposed expansion will have a maximum capacity of 15 tons of metal per hour. The same metal that has gone through the melting process is the same metal that gets processed throughout the process. There are no outsource intermediate products that will be processed and it is also not expected that preliminary products from the existing line will be finished or processed in the proposed line.

Existing Approvals

The table below shows the air approvals issued and pending to this source:

Table 1 - - Air Approvals		
Permit No.	Type	Issuance Date
079-57540-00018	State Construction	August 26, 1996
079-15119-00018	FESOP	pending

Table 1 - - Air Approvals		
Permit No.	Type	Issuance Date
079-16359-00018	Section 112(j) CAA	pending

An affidavit of construction was submitted by NVIC in November, 1997, signaling the start of the operation of the gray iron foundry as permitted in 1996. The OAQ acknowledged this by issuing an operation validation letter on December 9, 1997. This operation validation indicated that the operation permit expires on November 26, 2002. NVIC submitted a FESOP application on October 31, 2001.

Description of the Proposed Project

The proposed modification consists of the construction and operation of the following units and operations:

The emission units are group together in terms of the significant operations where they belong. Emission units might be insignificant on their own; however, they belong to the significant operations to process/finish/produce a product.

A CORE MAKING OPERATIONS

- (1) Raw core sand handling and storage, with a maximum capacity of 626 pounds of sand per hour, and the uncontrolled emissions exhausting inside the building.
- (2) A core machine with a maximum capacity 0.052 pound of resin per ceramic beads, and 626 pounds of sand per hour; and the uncontrolled emissions exhausting inside the building.
- (3) A core wash with a maximum capacity of 10 pounds of VOC per hour and the uncontrolled emissions exhausting inside the building.
- (4) A butane torch is use to flash off excess core wash. This torch has a maximum firing rate of 0.36 gallon per hour and 6 MMBTU/hour, and the uncontrolled emissions exhausting inside the building.

B MOLD MAKING OPERATIONS

- (1) Raw mold sand handling and storage, with a maximum capacity of 137.5 tons of sand per hour, and a dust collector (identified as Baghouse 2) for particulate control.
- (2) A molding machine with a maximum capacity of 137.5 tons of sand per year, 1.5 pounds of plastic per hour, and 0.77 pound of release agent VOC per hour; and the uncontrolled emissions exhausting inside the building.
- (3) A mold wash with a maximum capacity of 0.884 pound of wash VOC per hour, and the uncontrolled emissions exhausting inside the building.

- (4) Two (2) natural gas fired mold machine dryers, identified as 1 and 2, each rated at 0.00113 million (MM)BTU per hour, and the uncontrolled emissions exhausting inside the building.

C MELTING OPERATIONS

- (1) Metal and charge handling by mechanical conveyors, with maximum capacity of 15 tons of metal per hour, and the uncontrolled emissions exhausting directly to the atmosphere.
- (2) Two (2) electric induction furnaces, identified as 1 and 2, each rated at 15 tons of metal per hour, and with a donut hood exhausting to a dust collector (identified as Baghouse 1) for particulate control.
- (3) A natural gas fired single chamber rotary kiln dryer with a maximum rate of 11.25 tons of metal per hour and 7,500 cubic feet/min and 20 MMBTU per hour, with the particulate emissions controlled by Baghouse 1. This rotary kiln dryer is use to evaporate coolants off the metal prior to melting.

NVIC decided not to install an afterburner to the kiln dryer, because the VOC emissions are minimal.

- (4) A ladle with a natural gas fired preheater, with a maximum capacity of 1 MMBTU per hour, and the uncontrolled emissions exhausting inside the building. This preheater is use to dry the ladle prior to each filing.

D FLOOR MOLDING OPERATIONS

- (1) A floor mold wash with a maximum rate of 0.884 pound of wash VOC per hour and the uncontrolled emissions exhausting inside the building
- (2) A floor pouring and cooling, with a maximum rate of 15 tons of metal per hour and 0.17 pound of release agent VOC; utilizes a vacuum suction during pouring operations, and the controlled emissions exhausting inside the building.
- (3) A shakeout unit for casting operation, rated at 20 tons of metal per hour, and the particulate emissions controlled by Baghouse 2. Baghouse 2 will recycle all the sand collected back into the mold sand process. Baghouse 2 is the same dust collector in the raw mold sand handling and storage.

E PRE-FINISHING OPERATIONS

- (1) A pre-finish knock out station, consisting of three (3) sanders, with a maximum capacity of 20 tons of metal per hour, and dust collector (identified as Baghouse 4) for particulate control.
- (2) An enclosed shotblast machine, using steel shot at media, with a maximum capacity of 20 tons of metal per hour, with a dust collector (identified as Baghouse 3), rated at 0.03 grain per acfm outlet loading, for particulate control.

- (3) A core removal operation, rated at 20 tons of metal per hour, will remove the remaining sand cores from the casting, and the uncontrolled emissions exhausting directly to the atmosphere.
- (4) Five (5) coarse grinding stations, identified as 1, 2, 3, 4, and 5, each rated at 20 tons of metal per hour, and the particulate emissions controlled by Baghouse 4.

F FINISHING OPERATIONS

- (1) Filler/putty application to the casting to fill in any divots or scratches, with a maximum rate of 0.05 pound of VOC per hour for the entire finishing operations and with emissions exhausting inside the building.
- (2) Three (3) paint booths, identified as 1, 2, and 3, each utilizes an air spray gun, each with paper filters for particulate control.
 - (i) Paint booth 1 has a maximum capacity of 2.83 pounds of primer VOC per hour.
 - (ii) Paint booth 2 has a maximum capacity of 9.5 pounds of primer VOC per hour.
 - (iii) Paint booth 3 has a maximum capacity of 10.5 pounds of primer VOC per hour.
- (3) Three (3) paint booth dryers using natural gas as fuel, each rated at 0.0014125 MMBTU per hour, and the uncontrolled emissions exhausting directly to the atmosphere.
- (4) A buffing booth containing three (3) fine grinders or buffers, with a maximum capacity of 20 tons of metal per hour, and a dust collector (identified as Baghouse 5) for particulate control.
- (5) A putty booth used for additional repair and the particulate emissions are controlled by Baghouse 4. Baghouse 4 is the same dust collector in the pre-finish knock off station and grinders.
- (6) A final inspection paint booth with a maximum capacity of 3.75 pounds of VOC primer per hour, and the uncontrolled emissions exhausting inside the building.
- (7) A final inspection buffing station with a maximum capacity of 20 tons of metal per hour, and the particulate emissions controlled by Baghouse 5.

The maximum rates of these processes in the Finishing operations are in terms of VOC usage, not in terms of gallons per hour, because it provides NVIC the flexibility to look for and use primers with a lower or different VOC content, as long as the total allowed VOC usage is not exceeded. This also avoids unnecessary amendments to permits whenever NVIC wants to change a primer.

G **MISCELLANEOUS EMISSION UNITS**

- (1) Two (2) emergency generators, identified as 1 and 2, each is rated at 3.07 gallons of diesel fuel no. 2 per hour (125 kilowatts).
- (2) Seven (7) natural gas fired air make up units, identified as 1, 2, 3, 4, 5, 6, and 7, each rated at 5.28 MMBTU/hour.
- (3) Four (4) natural gas fired space heaters, identified as 1, 2, 6, and 7, each rated at 0.3 MMBTU per hour.
- (4) Six (6) natural gas fired space heaters, identified as 3, 4, 5, 8, 9 and 10; each rated at 1.125 MMBTU per hour.
- (5) Two (2) natural gas fired water heaters, identified as 1 and 2; each rated at 0.199 MMBTU per hour.
- (6) A Maintenance Department parts washing station, rated at 0.002 gallons of parts wash solution per hour, with estimated 4.4% volatile.
- (7) Paved roads.

The shakeout, pre-finishing and finishing operations were initially indicated by NVIC to have maximum capacity of 15 tons of metal/hour. On August 23, 2003, NVIC revised the maximum capacity to 20 tons/hour.

Integral Part of the Process

A Vacuum process associated with mold making operations:

- (1) Justification
NVIC must maintain a continuous negative pressure or vacuum on the Aopen® mold pattern in order to contain the molding sand and gray iron. The Aopen® mold pattern is not a complete sealed around the entire pattern. Therefore, if not operated properly, the molding sand and the gray iron will escape from the pattern, producing a flawed casting.

The vacuum process will prevent the generation of particulate emissions.

The negative pressure or vacuum must be maintained until the casting has properly cooled and can be transported to the shakeout unit.

The mold making, pouring and cooling operations can not operate without the vacuum pumps that maintain the vacuum process. The Aopen® mold casting process will be designed with the full intent to utilize the pumps to maintain the negative pressure.

- (2) Evaluation

The OAQ has evaluated the justification provided by NVIC and looked into other gray iron foundries. Gray iron foundries in Indiana have the same Aopen® mold pattern, and have to maintain a vacuum to prevent the sand and iron to escape. The OAQ is aware of no other gray iron foundry, besides NVIC, that claims the vacuum to be a non-control equipment. The OAQ acknowledges that the maintenance of the vacuum/negative pressure to the process is important, however, this does not support the justification that it is not used primarily as control. Therefore, the permitting level has been determined using the potential to emit before the associated vacuum system.

Whether the vacuum system is consider integral or control, the status of the source and the level of approval result to be the same.

B Dust collector (Baghouse 3) associated with the shot blast machine

(1) Justification

NVIC provided the following justification why the Baghouse 3 is consider an integral part of the process for the shot blast machine, rather than a particulate control. The actual write up submitted in the application is re-stated below for convenience.

- (i) The collector system will evacuate the fines (from spent shot and scale removed from the parts), which would otherwise decrease the efficiency of the system by reducing the mass of the shot being thrown at the parts and interfering with the contact of clean shot with the part surface.
- (ii) The purpose of the shotblast machine will be to clean the parts for further machining, painting or other process. In all cases, a part is free from fines will be essential to the quality of the process. Operation of the shotblast system without the collection system would immediately result in parts that do not meet the necessary standards for use in the subsequent process.
- (iii) The collection system protects the fan that creates the draft from the working surface. Without the collection system, particulate would directly impact the fan blades and degrade them.
- (iv) The collection system will be necessary to the recycling of the shotblast media. The system will be designed for such recycling to take place, and could not be operated otherwise.

(2) Evaluation

The IDEM OAQ has evaluated the justifications and determined that the Baghouse 3 is not consider an integral part of the process. This Baghouse 3 serves primarily as particulate control. The justification centers primarily with maintaining the efficiency of the process and producing less defective products if the dust collector is operating, however, this does not necessarily mean that the process can not totally operate without the dust collector. The shotblaster can operate without the dust collector until the concentration of fines is too great, which is understandable

Increase Utilization

Emission Calculations

Potential To Emit of Modification

These rates might not be accurate to the last digit, but the result or status of the review is the same.

Table 3 Total PTE of the Modification after the Issuance (Controls/Limits) (tons/year)								
Process/facility	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
Expansion	89.59	91.35	4.93	99.29	24.55	30.10	6.02	13.14
PSD Significant Level	100	100	100	100	100	100	10	25
The expansion is rated at 15 tons of metal/hour, with several individual units with maximum capacity of 20								

tons/hour.

This limited PTE is based at 93,900 tons of metal year. This annual limitation was voluntarily accepted by NVIC such that this proposed expansion is consider as PSD minor modification.

The single HAP is the worst case after taking into account the annual limit, and it is not necessarily the worst case HAP before the limit.

Detailed calculations are shown in Appendix A (16 pages).

Table 4 Total PTE of the Source after the Issuance (Controls/Limits) (tons/year)								
Process/facility	PM	PM ₁₀	SO ₂	VOC	CO	NO _x	HAPs	
Existing Operation	99.60	99.60	0.7	99.39	3.80	17.80	4.23	13.10
Expansion	89.59	91.35	4.93	99.29	24.55	30.10	6.02	13.14
Total	189.19	190.95	5.63	198.68	28.35	47.9		26.24
PSD Significant Level	25	15	40	100	100	40	10	25
<p>The existing operation is permitted under Permit 079-5754-00018, issued on August 26, 1997. These are the allowable PTE as determined in this existing permit.</p> <p>The source is 1 of the 28 listed source categories, thus the major source threshold is 100 tons/year.</p> <p>After this modification, the source is consider as PSD major source because the aggregate limited PTE of the entire source is greater than PSD major source threshold.</p> <p>This expansion does not affect or change the existing limits of the existing operations of the gray iron foundry.</p>								

Permit Level Evaluation for the Modification

The OAQ issued an operation validation letter on December 9, 1997 for the start of the gray iron foundry as permitted in 1996. This operation validation indicated that the operation permit expires on November 26, 2002. NVIC submitted a FESOP application on October 31, 2001. The FESOP application is still under review. NVIC is going to transition operating from a FESOP to a Part 70 permit. This proposed modification is performed as significant source modification (SSM) pursuant to 326 IAC 2-7-10.5 (f)(1) because:

- (1) The FESOP has not been issued yet,
- (2) After this modification, NVIC is going to operate under the Part 70 program, and
- (3) The PTE before and after controls/limitations is greater than 25 tons/year.

County Attainment Status

The source is located in Jennings County. Table 5 shows the attainment status of Jennings County.

Table 5 - - Jennings County	
Pollutant	Status
PM ₁₀	Attainment
SO ₂	Attainment
NO ₂	Attainment

Ozone	Attainment
CO	Attainment
Lead	Attainment

- (1) Volatile organic compounds (VOC) and Ozone
VOC are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Jennings County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD) 326 IAC 2-2.
- (2) Criteria Pollutants
Jennings County has been classified as attainment or unclassifiable for all the other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (3) Fugitive Emissions
Since this type of operation is one of the 28 listed source categories under 326 IAC 2-2-1(y)(1) and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are counted toward determination of PSD applicability.

Source Status

- (1) 1 of 28 Listed Source Categories [326 IAC 2-2-1(y)(1)]
After this modification, NVIC is a major stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the 28 listed source categories. This major status is based upon issued permits and existing enforceable potential to emit.
 - (a) Permit No. 079-5754-00018 limits the PTE of the entire existing gray iron foundry to less than 100 tons/year, thus the source was consider a PSD minor source.
 - (b) This proposed modification will be limited to less than 100 tons/year PTE, thus the modification will be consider a minor PSD modification to an existing PSD minor source.
 - (c) After the modification, the entire source will be consider a PSD major source.
- (2) Actual Emissions
There are no actual emissions that can be found in the IDEM, OAQ Emission Inventory, for NVIC.
- (3) Part 70 Source
NVIC submitted their FESOP application on October 31, 2001. The FESOP has not yet been issued and is still under review by the OAQ. After this modification, NVIC intends to operate under a Part 70 permit.

Federal Rule Applicability

- (1) New Source Performance Standards (NSPS)
There are no applicable 40 CFR Part 60 (NSPS) that applies to this modification.
- (2) National Emission Standards for Hazardous Air Pollutants (NESHAP)
There are no applicable 40 CFR Part 63 (NESHAP) that applies to this modification.
- (3) Section 112(j) of the Clean Air Act (CAA)
NVIC submitted their Part 1 application on May 15, 2002. This source requested for a CAA section 112(j) application determination on some processes of the plant.
- (4) Prevention of Significant Deterioration (PSD) 40 CFR 52.21
On March 3, 2003, the federal NSR reform under 40 CFR 52.21 became effective. The revisions provided new applicability provisions for PSD rules for baseline emissions determination, actual-to-projected-actual methodology, plant wide applicability limitations, clean units, and pollution control projects. None of these new provisions will change the final outcome of the PSD review on this proposed modification.

On March 3, 2003, US EPA published a notice for AConditional Approval of Implementation Plan: Indiana@in the Federal Register. This notice grants conditional approval to the PSD State Implementation Plan (SIP) under provisions of 40 CFR 51.166 and 40 CFR 52.770 while superceding the delegated PSD SIP authority under 40 CFR 52.793. The effective date for these provisions is April 2, 2003. Therefore, the PSD permits will be issued under the authority of 326 IAC 2-2 and will no longer be issued under the provision of 40 CFR 52.21 and 40 CFR 124.

The OAQ web site has been updated to include the SIP approval and information about the rulemaking. <http://www.in.gov/idem/air/permits/psdapprovalhistory.html>

The conditional approval of the PSD program can be found at:
<http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2003/03-5024.htm>

- (5) 40 CFR 64 (Compliance Assurance Monitoring)
There is no emission unit that has a PTE of 100 tons/year or more. Thus 40 CFR Part 64 does not apply.

State Rule Applicability

- (1) 326 IAC 1-6-3 (PMP)
 - (a) NVIC is subject to this rule even prior to this proposed modification.
 - (b) PMP is required for the metal and handling because even with the annual limitations, the particulate emissions are greater than 25 tons/year.
 - (c) No PMP is required for the ladle preheater because the emissions are minimal.

- (d) PMPs are required for the rotary kiln dryer, electric induction furnaces, core sand handling, and core machines to assure that they are operating properly.
 - (e) PMP is required for the pouring and cooling to assure that the vacuum system is operating properly.
 - (f) PMPs are required for the shakeout, mold sand handling and shotblast machine assure that the dust collectors are operating properly.
 - (g) PMP is required for the molding machine to make sure it is operating properly and minimizing the VOC emissions.
 - (h) No PMP is required for the mold dryers, paint booth dryers, shell core machine butane torch, core removal, coarse grinding stations, pre finish station, filler/putty application, buffing station, putty station, final inspection buffing station, emergency generators, air make units and heaters because their emissions are minimal.
 - (i) PMPs are required for the paint booths and final inspection paint booth to assure that the paper filters are operating properly.
 - (j) PMP is not required for the paved roads because a fugitive dust plan is already required.
- (2) 326 IAC 1-7-1 (Stack height requirements)
- (a) NVIC is not subject to this rule because entire expansion has a limited PTE less than 25 ton/year of SO₂. This also means that there is no single unit or process with limited PTE of 25 tons/year of SO₂.
 - (b) The total limited PM of the entire expansion is greater than 25 tons/year, however, the operations (metal and charge handling) with the significant PM emissions does not emit directly to the atmosphere. This rule does not apply because the emissions are emitted inside the building.
- (3) 326 IAC 2-1.1-8 (Time periods for determination on permit applications)
Pursuant to 326 IAC 2-1.1-8(a)(1), a final action needs to be issued no later than 120 calendar days from the receipt of the application, taking into account actions that can suspend the time period. The application was received on June 13, 2003. Without any suspension in the time period, the 120 day-period is estimated to end on October 1, 2003.
- (4) 326 IAC 2-2-1(PSD)
This proposed expansion is not subject to PSD requirements because annual production limitations have been taken by NVIC:
- (a) 93,900 tons of metal per year
 - (b) 70,400 tons of metal chips per year
 - (c) 860,400 tons of mold sand per year

- (d) 9,400 pounds of plastic per year at 19% volatile
- (e) 1,095 gallons of release agent II per year at 4.4 pound of VOC per gallon
- - equivalent to 4,818 pounds of VOC per year (2.41 tons/year).
- (f) 81,400 gallons of floor mold wash per year at 0.17 pound of VOC per gallon
- - equivalent to 13,838 pounds of VOC per year (6.92 tons/year).
- (g) 2,000 tons of core sand per year
- (h) 5,000 gallons of core resins per year at 1.13 pounds of VOC per gallon
- - equivalent to 5,650 pounds of VOC per year (2.825 tons/year).
- (i) 4,000 gallons of core wash per year at 4.4 pounds of VOC per gallon
- - equivalent to 17,600 pounds of VOC per year (8.8 tons/year).
- (j) 0.36 gallon of butane per hour (this is the maximum rate of the torch).
- (k) 6,300 gallons of filler and putty per year at 0.05 pound of VOC per gallon
- - equivalent to 315 pounds of VOC per year.
- (l) 40,000 gallons of primer per year at 3 pounds of VOC per gallon
- - equivalent to 120,000 pounds of VOC per year (60 tons/year).
- (m) 70,000 gallons of primer per year at 0.4 pound of VOC per gallon
- - equivalent to 28,000 pounds of VOC per year (14 tons/year).
- (n) 6.14 gallons of diesel per hour
- - equivalent to 53,786 gallons of diesel per year
- (p) and the unlimited PTE of the heaters and air make up units.

VOC limitations will be specified in terms of pounds per year, not in terms of gallons per year, to provide NVIC the flexibility to use different amount of VOC content and gallons, as long as the total VOC limitations are not exceeded.

- (5) 326 IAC 2-2.5-1 (PCP)
NVIC can not utilize this exclusion because the units that will be controlled by the controls (baghouses) are new units.
- (6) 326 IAC 2-6-1 (Emission Reporting)
NVIC is subject to this annual emission reporting requirement because it has a PTE of greater than 100 tons/year.
- (7) 326 IAC 2-7 (Part 70 program)
NVIC will submit a Part 70 permit application within 12 months after the operation of this expansion.
- (8) 326 IAC 3-5-1 (Continuous Monitoring of Emissions)

NVIC is not required to install continuous monitoring system because annual limitations, compliance monitoring and reporting are sufficient to verify compliance.

- (9) 326 IAC 4-1 (Open Burning)
NVIC shall not open burn material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4, or 326 IAC 4-1-6.
- (10) 326 IAC 2-4.1 (Hazardous Air Pollutants)
This modification is not subject to this rule because each HAPs is less than 10 tons/year and any combination of HAPs is less than 25 tons/year, however, after this modification, NVIC is consider as major source in terms of HAPs.
- (11) 326 IAC 5-1 (Opacity limitations)
The opacity shall not exceed 40%.
- (12) 326 IAC 6-1 (PM Nonattainment limitation)
This rule does not apply to NVIC because it is not located in a nonattainment area.
- (13) 326 IAC 6-2
There is no boiler to be constructed in this proposed expansion.
- (14) 326 IAC 6-3 (Particulate emission for manufacturing process)
Pursuant to 326 IAC 6-3-2(e), the allowable rate of emission for 15 tons of metal per hour is 25.2 pounds per hour.

Based on the calculations, the processes with this rate comply. See Appendix A (19 pages) for details.

The total process weight rate of the pouring and cooling operations is 152.82 tons/hour, consists of:

- 15 tons of metal per hour,
- 137.5 tons of molding sand per hour, and
- 0.313 tons of core sand per hour.

The total process weight rate of the shakeout operations is 204.37 tons/year, consisting of:

- 20 tons of metal/hour
- 183.33 tons of molding sand per hour, and
- 1.04 tons of core sand per hour.

- (15) 326 IAC 6-4 and 6-5 (Fugitive dust)
Even prior to this modification, NVIC is already subject to these rules. Fugitive dust crossing the boundary or property line should not be visible.
- (16) 326 IAC 7-1 (SO₂ Limitation)
NVIC is subject to this rule because it has 10 pounds/hour of actual emissions. SO₂ emissions from fuel combustion when using distillate oil shall not exceed 0.5 pounds/MMBTU.
- (17) 326 IAC 8 (VOC)

NVIC is subject to this rule because it has actual emissions greater than 15 pounds/day, however there is no specific RACT VOC limitations for gray iron foundry.

- (18) 326 IAC 8-1-6 (VOC BACT)
NVIC is not subject to this rule because 326 IAC 8-2-9 already applies.
- (19) 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)
Paint booth 1, Paint booth 2, Paint booth 3 and the Final inspection booth are individually subject to 326 IAC 8-2-9 because they have actual emissions greater than 15 pounds per day and will be constructed after 1990.

Based on the application and MSDS:

- (a) Paint booth 1 will use a gray primer with VOC content of 3 pounds/gallon;
- (b) Paint booth 2 will use a white primer with VOC content of 0.4 pound/gallon;
- (c) Paint booth 3 will use a yellow primer with VOC content of 3 pounds/gallon; and
- (d) Final inspection booth will use a yellow primer with VOC content of 3 pounds/gallon.

Based on these VOC content, these booths comply with the VOC content requirement of 3.5 pounds/gallon (326 IAC 8-2-9).

- (20) 326 IAC 9 (CO emission rules)
NVIC is subject to this rule because it commenced operation after March 21, 1972, however, no emission limit is specified for this type of operation.
- (21) 326 IAC 10 (NO_x rules)
This rule does not apply to NVIC because it is not located in Clark or Floyd Counties.
- (22) 326 IAC 11 (Source Specific limitations)
This rule establishes particulate emissions for foundries. All foundries beginning operations after December 6, 1968 shall comply with 326 IAC 6-3.
- (23) 326 IAC 12 (NSPS)
Compliance with this rule has been addressed under the Federal Rules Applicability of this TSD.
- (24) 326 IAC 13 (Motor vehicles emissions)
Not applicable.
- (25) 326 IAC 14 (HAPs Emission)
This rule incorporates by reference the 40 CFR Part 61. No 40 CFR Part 61 applies to this source.
- (26) 326 IAC 15 (Lead Rules)
NVIC is not of the listed sources subject to this rule.
- (27) 326 IAC 16 (Environmental Assessment, Activities of State Agencies)
The air permitting review process indirectly satisfy this rule.

- (28) 326 IAC 17 (Public records)
There is no confidentiality request made regarding the application submitted.
- (29) 326 IAC 18 (Asbestos Management at School)
Not applicable.
- (30) 326 IAC 19 (Mobile Source Rules)
These particular rules are applicable to employees in Lake and Porter Counties only. These are not applicable because NVIC is located in Jennings County.

Compliance Determination and Monitoring

The OAQ has evaluated monitoring requirements and recommends the following:

- (1) Compliance monitoring, record keeping and reporting is required for the metal handling because even with the annual limitations, the particulate emissions are greater than 25 tons/year.
- (2) No compliance monitoring is required for the ladle preheater because the emissions are minimal.
- (3) Compliance monitoring, record keeping and reporting are required for the rotary kiln dryer, electric induction furnaces, core sand handling, and core machines to assure that they operating properly. There are no visible emissions notations required for the core making because the emissions exhaust inside the building.
- (4) Compliance monitoring, record keeping and reporting required for the pouring and cooling to assure that the vacuum system is operating properly.
- (5) Compliance monitoring, record keeping and reporting are required for the shakeout, mold sand handling and shotblast machine assure that the dust collectors are operating properly.
- (6) Compliance monitoring, record keeping and reporting are required for the molding machine to make sure it is operating properly and minimizing the VOC emissions.
- (7) No compliance monitoring is required for the mold dryers, paint booth dryers, shell core machine butane torch, core removal, coarse grinding stations, pre finish station, filler/putty application, buffing station, putty station, final inspection buffing station, emergency generators, air make units and heaters because their emissions are minimal. Record keeping is required for the annual limitations.
- (8) Compliance monitoring, record keeping and reporting are required for the paint booths and final inspection paint booth to assure that the paper filters are operating properly.
- (9) Compliance monitoring, record keeping and reporting are required for the paved roads to assure that the fugitive dust plan is being implemented.
- (10) There is no addition compliance monitoring is required for the requirement to use natural gas fuel as fuel as long as the natural gas is through pipeline.

Testing Requirements

Since the existing similar operations of NVIC have been recently tested (2003), there will be no compliance testing required for the new operations.

Recommendation

Based on the facts, conditions and evaluations made, OAQ recommends to the IDEM Commissioner that the preliminary findings in the SSM 079-17819-00018 be provided to the public for review.

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on June 13, 2003. An interim construction was also submitted and approved on July 7, 2003.

The applicant has provided a copy of the application in the Jennings County Public Library, 2375 North State Highway 3, North Vernon, IN 47265.

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 SSM Permit No. 079-17819-00018.

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
Scrap & Charge Handling (15 ton/hr) 3-04-003-15	131,400.00 (tons/year) metal	PM PM10	0.60 0.36	AP-42 AP-42	0	0	39.4200	23.6520	0.0000	0.0000	0.0000	0.0000
Ladle Preheater 1-03-006-03	1.00 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0333	0.0333	0.0026	0.4380	0.0241	0.3679
Emission Factor = lb/mmCFT												
Rotary Kiln Dryer (8.04 ton/hr) 1-03-006-03	7,500.00 acfm	PM PM10	0.01 0.01 gr/dscf	Manufacturer Manufacturer	already taken into account		2.0112	2.0112	0.0000	0.0000	0.4928	0.0000
Coolant is estimated to be 0.05% by weight of chip	70,400.00 (tons/year) scrap chips	VOC	1.40 %	MSDS	0	0						
Rotary Kiln Dryer Natural Gas Input 1-03-006-03	20.00 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.6658	0.6658	0.0526	8.7600	0.4818	7.3584
Emission Factor = lb/mmCFT												
Electric Induction Furnaces (15 ton/hr) 3-04-003-03	131,400.00 (tons/year) metal	PM PM10	0.95 0.86	2003 test AP-42	99	75	16.0719	14.5493	0.0000	0.0000	0.0000	0.0000
Baghouse												
Pouring/Cooling (15 ton/hr) 3-04-003-20	131,400.00 (tons/year) metal	PM PM10 SOx NOx VOC	- - 0.02 0.01 0.17	Vacuum Vacuum AP-42 AP-42 Release Agent MSDS	0	0	0.0000	0.0000	1.3140	0.6570	1.1727	0.0000
*1.575 gallons/hour of release agent used												
Shakeout (20 tons/hr) 3-04-003-31	175,200.00 (tons/year) metal	PM PM10	4.20 3.75	2003 test 2003 test	99	98	10.9640	9.7893	0.0000	0.0000	0.0000	0.0000
Baghouse		VOC	-	Already Accounted For in Mold Making & Core Making Operations								
Mold Sand Handling (137.5 ton/hr) 3-04-003-50	1,204,500.00 (tons/year)	PM PM10	3.60 0.54	AP-42 AP-42	99	100	21.6810	3.2522	0.0000	0.0000	0.0000	0.0000
Baghouse		VOC	0.00	MSDS								
Molding Machine (15 ton/hr) 3-04-003-98	13,140.00 (pounds/year) plastic	VOC	0.19 %	MSDS	0	0	0.0000	0.0000	0.0000	0.0000	8.4928	0.0000
(0.175 gal/hr)	1,533.00 (gallons/year) release agent II	VOC	4.40 lb/gal									
(5.2 gal/hr)	45,552.00	VOC	0.17									

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
	(gallons/year) mold wash		lb/gal									
Mold Dryer #1 1-03-006-03	0.0113 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0004	0.0004	0.0000	0.0050	0.0003	0.0042
Emission Factor = lb/mmCFT												
Mold Dryer #2 1-03-006-03	0.0303 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0010	0.0010	0.0001	0.0132	0.0007	0.0111
Emission Factor = lb/mmCFT												
Core Sand Handling (626 lb/hr) 3-04-003-50	2,741.880 (tons/year) sand	PM PM10	3.60 0.54	AP-42 AP-42	0	0	4.9354	0.7403	0.0000	0.0000	0.0000	0.0000
Core Machine (0.571 gal/hr) 3-04-003-70	5,000.00 (gallons/year) resin	VOC	1.13 lb/gal	MSDS	0	0	0.0000	0.0000	0.0000	0.0000	11.6250	0.0000
	(0.457 gal/hr) 4,000.00 (gallons/year) core wash	VOC	4.40 lb/gal	MSDS								
Shell Core Machine Butane Torch 1-03-010-01	0.36 (gallons/hour)	PM PM10 SOx NOx VOC CO	0.50 0.50 0.09 15.00 0.60 2.10	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0008	0.0008	0.0001	0.0237	0.0009	0.0033
Emission Factor = lb/1,000 gallons												
Pre-Finish Station (15 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	65.7000	175.2000	0.0000	0.0000	0.0000	0.0000
Shotblast Machine (20 ton/hr) 3-04-003-40	175,200.00 (tons/year) metal	PM PM10	0.75 0.60	2003 test 2003 test	99	100	0.6570	0.5256	0.0000	0.0000	0.0000	0.0000
Core Removal Operation (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	65.7000	175.2000	0.0000	0.0000	0.0000	0.0000
Coarse Grinding Station #1 (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	65.7000	175.2000	0.0000	0.0000	0.0000	0.0000
Coarse Grinding Station #2 (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	Emissions Accounted for in Coarse Grinding Station #1					

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
Coarse Grinding Station #3 (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	Emissions Accounted for in Coarse Grinding Station #1					
Coarse Grinding Station #4 (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	Emissions Accounted for in Coarse Grinding Station #1					
Coarse Grinding Station #5 (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	0	0	Emissions Accounted for in Coarse Grinding Station #1					
Filler/Putty Application (1 gal/hr) 4-02-025-99	8,760.00 (gallons/year)	VOC	0.05 lb/gal	MSDS	0	0	0.0000	0.0000	0.0000	0.0000	0.2190	0.0000
Paint Booth #1 (2.25 gal/hr) Grey Primer 4-02-006-10 Primer is 60% solids	19,710.00 (gallons/year) primer	VOC PM PM10	3.00 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		6.5043	6.5043	0.0000	0.0000	29.5650	0.0000
Paint Booth #1 Dryer 1-03-006-03 Emission Factor = lb/mmctf	0.004125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0001	0.0001	0.0000	0.0018	0.0001	0.0015
Paint Booth #2 (17.2 gal/hr) White Primer 4-02-006-10 paper filter Primer is 70% solids	150,672.00 (gallons/year) primer	VOC PM PM10	0.40 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		12.4304	12.4304	0.0000	0.0000	30.1344	0.0000
Paint Booth #2 Dryer 1-03-006-03 Emission Factor = lb/mmctf	0.004125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0001	0.0001	0.0000	0.0018	0.0001	0.0015
Buffing Booth (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.35 0.9500	2003 test 2003 test	0	0	30.6600	83.2200	0.0000	0.0000	0.0000	0.0000
Paint Booth #3 (3.5 gal/hr) Yellow Primer 4-02-006-10 paper filter Primer is 54% Solids	30,660.00 (gallons/year) primer	VOC PM PM10	3.00 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		2.5295	2.5295	0.0000	0.0000	45.9900	0.0000
Paint Booth #3 Dryer 1-03-006-03 Emission Factor = lb/mmctf	0.004125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0001	0.0001	0.0000	0.0018	0.0001	0.0015
Putty Booth (20 ton/hr)	175,200.00	PM	0.75	2003 test	0	0	65.7000	175.2000	0.0000	0.0000	0.0000	0.0000

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
3-04-003-60	(tons/year) metal	PM10	2.0000	2003 test								
Final Inspection Buffing Station (20 ton/hr) 3-04-003-60	175,200.00 (tons/year) metal	PM PM10	0.01 0.0045	AP-42 AP-42	0	0	0.8760	0.3942	0.0000	0.0000	0.0000	0.0000
Final Inspection Paint Booth Yellow Primer (1.25 gal/hr) 4-02-006-10 paper filter Primer is 54% Solids	10,950.00 (gallons/year) primer	VOC PM PM10	3.00 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		0.9034	0.9034	0.0000	0.0000	16.4250	0.0000
Emergency Generator 1 1-03-005-01	3.07 (gallons/hour) diesel #2	PM PM10 SOx NOx VOC CO	2.00 2.00 142.00 20.00 0.34 5.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0269	0.0269	1.9094	0.2689	0.0046	0.0672
Emission Factor = lb/1,000 gallons												
Emergency Generator 2 1-03-005-01	3.07 (gallons/hour) diesel #2	PM PM10 SOx NOx VOC CO	2.00 2.00 142.00 20.00 0.34 5.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0269	0.0269	1.9094	0.2689	0.0046	0.0672
Emission Factor = lb/1,000 gallons												
Air Makeup Unit 1 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 2 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 3 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 4 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 5	5.28	PM	7.60	AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
1-03-006-03	(mmBTU/hr) natural gas	PM10 SOx NOx VOC CO	7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42								
Emission Factor = lb/mmcf												
Air Makeup Unit 6 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 7 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Water Heater 1 1-03-006-03	0.199 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0066	0.0066	0.0005	0.0872	0.0048	0.0732
Emission Factor = lb/mmcf												
Water Heater 2 1-03-006-03	0.199 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0066	0.0066	0.0005	0.0872	0.0048	0.0732
Emission Factor = lb/mmcf												
Maintenance Parts Washing Station	37.500 (gallons/year)	VOC	0.392 (lb/gal)	MSDS	0	0	0.0000	0.0000	0.0000	0.0000	0.0074	0.0000
Natural Gas Heater 1 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 2 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 3 1-03-006-03	1.125 (mmBTU/hr)	PM PM10	7.60 7.60	AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
	natural gas	SOx NOx VOC CO	0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42								
Emission Factor = lb/mmcf												
Natural Gas Heater 4 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 5 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 6 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 7 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 8 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 9 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 10 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139

Appendix A -- PTE Before Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions Before Controls (tons/year)					
							PM	PM10	SOx	NOx	VOC	CO
Emission Factor = lb/mmct												
Paved Roads	5,475 (miles/year)	PM PM10	0.2904 0.0567	AP-42 AP-42	0	0	0.795	0.1551	0.0000	0.0000	0.0000	0.0000
Total Potential Emissions Before Controls and Limits (tons/year)							415.50	863.72	5.31	30.29	145.73	24.55

NOTE:

15 tons of metal per hour = 131,400 tons of metal per year.

CALCULATION EXAMPLES:

Scrap & Charge Handling PM Emissions (Tons/Year) = (15.0 tons metal/hour)(0.60 pounds PM/ton metal)(8,760 hours/year)/(2,000 pounds/ton) = 39.42 tons PM/year

Ladle Preheater PM Emissions (Tons/Year) = (0.40 mmBTU/hr)(1 mmBTU/1,000 mmCFT)(1.90 pounds PM/mmCFT)(8,760 hours/year)/(2,000 pounds/ton) = 0.0033 tons PM/year

Rotary Kiln Dryer PM Emissions (Tons/Year) = (3,000 acfm)(0.01 grains PM/acfm)(1 pounds/7,000 grains)(60 minutes/hour)(8,760 hours/year)/(2,000 pounds/ton) = 1.1263 tons PM/year

Rotary Kiln Dryer VOC Emissions (Tons/Year) = (4.50 tons scrap/hour)(0.002 coolant)(0.0534 VOC rate)(8,760 hours/year) = 4.2123 tons VOC/year

Paint Booth #1 PM Emissions (Tons/Year) = (0.09 gallons primer/hour)(0.6 solids rate)(1-0.75 transfer rate)(11.0 pounds/gallon density)(8,760 hours/year)/(2,000 pounds/ton)(1-0.9) = 2.6017 tons PM/

Process Weight Rate Calculations

$$E = 4.10 \cdot P^{(0.67)}$$

where: P < 60,000 pounds/hour (30 tons/hour)
E = rate of emissions in pounds/hour
P = process weight rate in tons/hour

OR

$$E = 55.0 \cdot P^{(0.11)} - 40$$

where: P > 60,000 pounds/hour (30 tons/hour)
E = rate of emissions in pounds/hour
P = process weight rate in tons/hour

Scrap & Charge Handling

P = 15 tons/hour
 $E = 4.10 \cdot P^{(0.67)}$
E = 25.16 lbs/hour
PM = P * PM Emission Factor * (1 - Overall Control Efficiency)
PM Emission Factor = 0.6 lb/ton
Overall Control Efficiency = 0
PM = 9.00 lbs/hour

AP-42 emissions factor shows OK

Induction Furnaces

P = 15 tons/hour
 $E = 4.10 \cdot P^{(0.67)}$
E = 25.16 lbs/hour
PM = P * PM Emission Factor * (1 - Overall Control Efficiency)
PM Emission Factor = 0.90 lb/ton
Overall Control Efficiency = 0
PM = 13.50 lbs/hour

AP-42 emissions factor shows OK

Pouring/Cooling

P = 15 tons/hour metal
137.81 tons/hour sand&cores

$$E = 55.0 \cdot P^{(0.11)} - 40$$

$$E = 55.64 \text{ lbs/hour}$$

$$PM = P \cdot \text{PM Emission Factor} \cdot (1 - \text{Overall Control Efficiency})$$

$$\text{PM Emission Factor} = 4.2 \text{ lb/ton metal}$$

$$\text{Overall Control Efficiency} = 100\%$$

$$PM = 0.00 \text{ lbs/hour}$$

AP-42 emissions factor shows OK

Shakeout

P = 20 tons/hour metal
137.81 tons/hour sand&cores

$$E = 55.0 \cdot P^{(0.11)} - 40$$

$$E = 55.98 \text{ lbs/hour}$$

$$PM = P \cdot \text{PM Emission Factor} \cdot (1 - \text{Overall Control Efficiency})$$

$$\text{PM Emission Factor} = 3.2 \text{ lb/ton}$$

$$\text{Overall Control Efficiency} = 97.02\%$$

$$PM = 1.91 \text{ lbs/hour}$$

AP-42 emissions factor shows OK

Mold Sand Handling

$$P = 137.50 \text{ tons/hour}$$

$$E = 55.0 \cdot P^{(0.11)} - 40$$

$$E = 54.53 \text{ lbs/hour}$$

$$PM = P \cdot \text{PM Emission Factor} \cdot (1 - \text{Overall Control Efficiency})$$

$$\text{PM Emission Factor} = 3.6 \text{ lb/ton}$$

$$\text{Overall Control Efficiency} = 99\%$$

$$PM = 4.95 \text{ lbs/hour}$$

AP-42 emissions factor shows OK

Core Sand Handling

P = 0.31 tons/hour
E = $4.10 \cdot P^{(0.67)}$
E = 1.88 lbs/hour
PM = P*PM Emission Factor*(1-Overall Control Efficiency)
PM Emission Factor = 3.60 lb/ton
Overall Control Efficiency= 0
PM = 1.13 lbs/hour

AP-42 emissions factor shows OK

Shot Blast

P = 20.00 tons/hour
E = $4.10 \cdot P^{(0.67)}$
E = 30.51 lbs/hour
PM = P*PM Emission Factor*(1-Overall Control Efficiency)
PM Emission Factor = 17 lb/ton
Overall Control Efficiency= 99%
PM = 3.40 lbs/hour

AP-42 emissions factor shows OK

Cleaning & Grinding

P = 20.00 tons/hour
E = $4.10 \cdot P^{(0.67)}$
E = 30.51 lbs/hour
PM = P*PM Emission Factor*(1-Overall Control Efficiency)
PM Emission Factor = 0.01 lb/ton
Overall Control Efficiency= 0
PM = 0.20 lbs/hour

AP-42 emissions factor shows OK

NVIC
HAP Derivation

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Scrap and Charge	0.6	chromium	0.038%	0.00023	Speciate
Handling		cobalt	0.003%	0.00002	Speciate
SCC# 3-04-003-15		nickel	0.067%	0.00040	Speciate
AP-42 Ch. 12.10		arsenic	0.013%	0.00008	Speciate
		cadmium	0.006%	0.00004	Speciate
		selenium	0.001%	0.00001	Speciate
		manganese	0.600%	0.00360	MSDS
		antimony	0.185%	0.00111	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Melting - Electric	0.90	chromium	0.038%	0.00023	Speciate
Induction Furnaces		cobalt	0.003%	0.00002	Speciate
		nickel	0.067%	0.00040	Speciate
		arsenic	0.013%	0.00008	Speciate
EPA SCC# 3-04-003-03		cadmium	0.006%	0.00004	Speciate
AP-42 Ch. 12.10		selenium	0.001%	0.00001	Speciate
		manganese	0.600%	0.00360	MSDS
		antimony	0.185%	0.00111	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
	0	chromium	0.038%	0.00000	Speciate
Pouring/Cooling		cobalt	0.003%	0.00000	Speciate
SCC# 3-04-003-18		nickel	0.067%	0.00000	Speciate
		arsenic	0.013%	0.00000	Speciate
**Vacuum Process Controls PM/PM10		cadmium	0.006%	0.00000	Speciate
Emissions**		selenium	0.001%	0.00000	Speciate
		manganese	0.600%	0.00000	MSDS
		antimony	0.185%	0.00000	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
	3.2	chromium	0.038%	0.00122	Speciate
Castings Shakeout		cobalt	0.003%	0.00010	Speciate
SCC# 3-04-003-31		nickel	0.067%	0.00214	Speciate
AP-42 Ch. 12.10		arsenic	0.013%	0.00042	Speciate
		cadmium	0.006%	0.00019	Speciate
		selenium	0.001%	0.00003	Speciate
		manganese	0.600%	0.01920	MSDS
		antimony	0.185%	0.00592	Speciate

NVIC
HAP Derivation

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Casting Cleaning and Finishing SCC# 3-04-003-40 AP-42 Ch. 12.10	17	chromium	0.038%	0.00646	Speciate
		cobalt	0.003%	0.00051	Speciate
		nickel	0.067%	0.01139	Speciate
		arsenic	0.013%	0.00221	Speciate
		cadmium	0.006%	0.00102	Speciate
		selenium	0.001%	0.00017	Speciate
		manganese	0.600%	0.10200	MSDS
		antimony	0.185%	0.03145	Speciate

Process:	Pollutant	Ef (lb/MMcf produced)	Source
Natural Gas Units SCC#1-02-006-03	benzene	0.00210	AP-42
	dichlorobenzene	0.00120	AP-42
	formaldehyde	0.07500	AP-42
	hexane	1.80000	AP-42
	toluene	0.00340	AP-42
	lead	0.0005	AP-42
	cadmium	0.0011	AP-42
	chromium	0.0014	AP-42
	manganese	0.00038	AP-42
	nickel	0.0021	AP-42

NVIC
HAP Calculations

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Scrap and Charge	93,900.00	chromium	0.00023	0.01	0.01	baghouse	0.00%
Handling		cobalt	0.00002	0.00	0.00		
SCC# 3-04-003-15		nickel	0.00040	0.02	0.02		
AP-42 Ch. 12.10		arsenic	0.00008	0.00	0.00		
		cadmium	0.00004	0.00	0.00		
		selenium	0.00001	0.00	0.00		
		manganese	0.00360	0.17	0.17		
		antimony	0.00111	0.05	0.05		

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Melting - Electric	93,900.00	chromium	0.00023	0.01	0.00	baghouse	74.25%
Induction Furnaces		cobalt	0.00002	0.00	0.00		
EPA SCC# 3-04-003-03		nickel	0.00040	0.02	0.00		
AP-42 Ch. 12.10		arsenic	0.00008	0.00	0.00		
		cadmium	0.00004	0.00	0.00		
		selenium	0.00001	0.00	0.00		
		manganese	0.00360	0.17	0.04		
		antimony	0.00111	0.05	0.01		

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Pouring/Cooling	93,900.00	chromium	0.00000	0.00	0.00	Vacuum Process	100.0%
SCC# 3-04-003-18		cobalt	0.00000	0.00	0.00		
		nickel	0.00000	0.00	0.00		
**Vacuum Process Controls PM/PM10		arsenic	0.00000	0.00	0.00		
Emissions**		cadmium	0.00000	0.00	0.00		
		selenium	0.00000	0.00	0.00		
		manganese	0.00000	0.00	0.00		
		antimony	0.00000	0.00	0.00		

NVIC
HAP Calculations

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Shakeout SCC# 3-04-003-31 AP-42 Ch. 12.10	93,900.00	chromium	0.00122	0.06	0.00	baghouse	94.05%
		cobalt	0.00010	0.00	0.00		
		nickel	0.00214	0.10	0.01		
		arsenic	0.00042	0.02	0.00		
		cadmium	0.00019	0.01	0.00		
		selenium	0.00003	0.00	0.00		
		manganese	0.01920	0.90	0.05		
		antimony	0.00592	0.28	0.02		

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Cleaning and Finishing SCC# 3-04-003-40 AP-42 Ch. 12.10	93,900.00	chromium	0.00646	0.30	0.00	baghouse	99.0%
		cobalt	0.00051	0.02	0.00		
		nickel	0.01139	0.53	0.01		
		arsenic	0.00221	0.10	0.00		
		cadmium	0.00102	0.05	0.00		
		selenium	0.00017	0.01	0.00		
		manganese	0.10200	4.79	0.05		
		antimony	0.03145	1.48	0.01		

Process:	Maximum Hourly Capacity (mmBTU/hour)	Pollutant	Ef (lb/mmcf produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Natural Gas Units SCC#1-02-006-03	66.36	benzene	0.00210	0.00	0.00	None	0.00
		dichlorobenzene	0.00120	0.00	0.00		
		formaldehyde	0.07500	0.02	0.02		
		hexane	1.80000	0.52	0.52		
		toluene	0.00340	0.00	0.00		
		lead	0.00050	0.00	0.00		
		cadmium	0.00110	0.00	0.00		
		chromium	0.00140	0.00	0.00		
		manganese	0.00038	0.00	0.00		
		nickel	0.00210	0.00	0.00		

NVIC
HAP Calculations

Process:	Annual Capacity (gallons resin/year)	Pollutant	Ef (lb/gallon used)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Core Making	5,000.00	Phenol	0.01130	2.83E-02	0.03	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Fill/Putty Application	6,300.00	Styrene	0.05000	1.58E-01	0.16	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Primer #1	16,000.00	Styrene	0.25200	2.02E+00	2.72	None
		Xylene	0.06300	5.04E-01		
		Ethylbenzene	0.02520	2.02E-01		

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Primer #2	70,000.00	Styrene	0.11000	3.85E+00	3.85	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Primer #3	16,000.00	Glycol Ether	0.45000	3.60E+00	3.60	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Final Inspection Paint	8,000.00	Glycol Ether	0.45000	1.80E+00	1.80	None

NVIC
HAP Calculations

Total Potential Emissions Before Controls

cadmium	0.06	tons/year
chromium	0.38	tons/year
cobalt	0.03	tons/year
nickel	0.67	tons/year
arsenic	0.13	tons/year
selenium	0.01	tons/year
lead	0.00	tons/year
manganese	6.03	tons/year
antimony	1.86	tons/year
benzene	0.00	tons/year
dichlorobenzene	0.00	tons/year
ethylbenzene	0.20	tons/year
formaldehyde	0.02	tons/year
glycol ether	5.40	tons/year
hexane	0.52	tons/year
phenol	0.03	tons/year
styrene	6.02	tons/year
toluene	0.00	tons/year
xylene	0.50	tons/year
Total	21.88	tons/year

Total Potential Emissions After Controls

cadmium	0.00	tons/year
chromium	0.02	tons/year
cobalt	0.00	tons/year
nickel	0.04	tons/year
arsenic	0.01	tons/year
selenium	0.00	tons/year
lead	0.00	tons/year
manganese	0.31	tons/year
antimony	0.10	tons/year
benzene	0.00	tons/year
dichlorobenzene	0.00	tons/year
ethylbenzene	0.20	tons/year
formaldehyde	0.02	tons/year
glycol ether	5.40	tons/year
hexane	0.52	tons/year
phenol	0.03	tons/year
styrene	6.02	tons/year
toluene	0.00	tons/year
xylene	0.50	tons/year
Total	13.18	tons/year

Methodology:

Ef = Emission factor

Ebc = Potential Emissions before controls = Rate (units/hr) x Ef(lbs/unit) x 8760 hrs/yr / 2000 lbs/hr

Eac = Potential Emissions after controls = (1-efficiency/100) x Ebc

1 lb = 2000 tons

Paved Road Fugitive Emissions

$$E = k (sL/2)^{0.65} (W/3)^{1.5}$$

AP-42 Chapter 13.2.1.3 equation (1)

Where:

E = particulate emission factor

k = particulate size multiplier (lb/VMT)

sL = road surface silt loading (g/m²)

W = average weight (tons) of all vehicles traveling on road

VMT = vehicle miles traveled

k =	0.082 lb PM/VMT	AP-42 Chapter 13.2.1.3(Table 13.2-1.1)
	0.016 lb PM10/VMT	AP-42 Chapter 13.2.1.3(Table 13.2-1.1)

sL =	0.400 g/m ² PM	AP-42 Chapter 13.2.1.3(Table 13.2-1-2)
	0.400 g/m ² PM10	AP-42 Chapter 13.2.1.3(Table 13.2-1-2)

W =	14.00 tons	Calculated From Table Below
W = SUM((Weight of Vehicle Full * Number of Vehicles per day))/(Total Number of Vehicles per day)		

PM Emission Factor = $(k)(sL/2)^{0.65} (W/3)^{1.5}$
 PM Emission Factor = 0.290 lb PM/VMT

PM10 Emission Factor = $(k)(sL/2)^{0.65} (W/3)^{1.5}$
 PM10 Emission Factor = 0.057 lb PM10/VMT

Type of Vehicle	Weight of Vehicle Empty (tons)	Weight of Vehicle Full (tons)	Number of Vehicles (per day)	Miles Traveled (per year)	PM Emissions (tons/year)	PM10 Emissions (tons/year)
Fork Lift Trucks	2	3	10	3,650	0.530	0.103
Semi Trucks	15	25	10	1,825	0.265	0.052
Total =					0.795	0.155

Note:

Fork Lift Trucks Miles Traveled = 1 mile per day * 365 days per year * 10 vehicles per day = 3,650 miles per year

Semi Trucks Miles Traveled = 0.5 mile per day * 365 days per year * 10 vehicles per day = 1,850 miles per year

Process Weight Rate Calculations

$$E = 4.10 \cdot P^{(0.67)}$$

where: P < 60,000 pounds/hour (30 tons/hour)
E = rate of emissions in pounds/hour
P = process weight rate in tons/hour

OR

$$E = 55.0 \cdot P^{(0.11)} - 40$$

where: P > 60,000 pounds/hour (30 tons/hour)
E = rate of emissions in pounds/hour
P = process weight rate in tons/hour

Scrap & Charge Handling

P = 15 tons/hour
 $E = 4.10 \cdot P^{(0.67)}$
E = 25.16 lbs/hour
PM = P * PM Emission Factor * (1 - Overall Control Efficiency)
PM Emission Factor = 0.6 lb/ton
Overall Control Efficiency = 0
PM = 9.00 lbs/hour

AP-42 emissions factor shows OK

Induction Furnaces

P = 15 tons/hour
 $E = 4.10 \cdot P^{(0.67)}$
E = 25.16 lbs/hour
PM = P * PM Emission Factor * (1 - Overall Control Efficiency)
PM Emission Factor = 0.90 lb/ton
Overall Control Efficiency = 0
PM = 13.50 lbs/hour

AP-42 emissions factor shows OK

Pouring/Cooling

P = 15 tons/hour metal
137.81 tons/hour sand&cores

$$E = 55.0 \cdot P^{(0.11)} - 40$$

E = 55.64 lbs/hour

$$PM = P \cdot \text{PM Emission Factor} \cdot (1 - \text{Overall Control Efficiency})$$

PM Emission Factor = 4.2 lb/ton metal

Overall Control Efficiency = 100%

PM = 0.00 lbs/hour

AP-42 emissions factor shows OK

Shakeout

P = 15 tons/hour metal
137.81 tons/hour sand&cores

$$E = 55.0 \cdot P^{(0.11)} - 40$$

E = 55.64 lbs/hour

$$PM = P \cdot \text{PM Emission Factor} \cdot (1 - \text{Overall Control Efficiency})$$

PM Emission Factor = 3.2 lb/ton

Overall Control Efficiency = 97.02%

PM = 1.43 lbs/hour

AP-42 emissions factor shows OK

Mold Sand Handling

P = 137.50 tons/hour

$$E = 55.0 \cdot P^{(0.11)} - 40$$

E = 54.53 lbs/hour

$$PM = P \cdot \text{PM Emission Factor} \cdot (1 - \text{Overall Control Efficiency})$$

PM Emission Factor = 3.6 lb/ton

Overall Control Efficiency = 99%

PM = 4.95 lbs/hour

AP-42 emissions factor shows OK

Core Sand Handling

P = 0.31 tons/hour
E = $4.10 \cdot P^{(0.67)}$
E = 1.88 lbs/hour
PM = P*PM Emission Factor*(1-Overall Control Efficiency)
PM Emission Factor = 3.60 lb/ton
Overall Control Efficiency= 0
PM = 1.13 lbs/hour

AP-42 emissions factor shows OK

Shot Blast

P = 15.00 tons/hour
E = $4.10 \cdot P^{(0.67)}$
E = 25.16 lbs/hour
PM = P*PM Emission Factor*(1-Overall Control Efficiency)
PM Emission Factor = 17 lb/ton
Overall Control Efficiency= 99%
PM = 2.55 lbs/hour

AP-42 emissions factor shows OK

Cleaning & Grinding

P = 15.00 tons/hour
E = $4.10 \cdot P^{(0.67)}$
E = 25.16 lbs/hour
PM = P*PM Emission Factor*(1-Overall Control Efficiency)
PM Emission Factor = 0.01 lb/ton
Overall Control Efficiency= 0
PM = 0.15 lbs/hour

AP-42 emissions factor shows OK

Appendix A - PTE After Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions After Controls					
							PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Scrap & Charge Handling 3-04-003-15	93,900.00 (tons/year) metal	PM PM10	0.60 0.36	AP-42 AP-42	0	0	28.1700	16.9020	0.0000	0.0000	0.0000	0.0000
Ladle Preheater 1-03-006-03	1.00 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0333	0.0333	0.0026	0.4380	0.0241	0.3679
Emission Factor = lb/mmCFT												
Rotary Kiln Dryer 1-03-006-03	7,500.00 acfm	PM PM10	0.01 0.01	Manufacturer Manufacturer	already taken into account		2.0112	2.0112	0.0000	0.0000	0.4928	0.0000
Coolant is estimated to be 0.05% by weight of chip	70,400.00 (tons/year) scrap chips	VOC	1.40 %	MSDS	0	0						
Rotary Kiln Dryer Natural Gas Input 1-03-006-03	20.00 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.6658	0.6658	0.0526	8.7600	0.4818	7.3584
Emission Factor = lb/mmCFT												
Electric Induction Furnaces 3-04-003-03	93,900.00 (tons/year) metal	PM PM10	0.95 0.86	2003 test AP-42	99	75	11.4851	10.3971	0.0000	0.0000	0.0000	0.0000
Pouring/Cooling 3-04-003-20	93,900.00 (tons/year) metal	PM PM10 SOx NOx VOC	0.10 0.10 0.02 0.01 0.17	Vacuum Vacuum AP-42 AP-42 Release Agent MSDS	0	0	0.0000	0.0000	0.9390	0.4695	1.1727	0.0000
*1.575 gallons/hour of release agent used												
Shakeout 3-04-003-31	93,900.00 (tons/year) metal	PM PM10 VOC	4.20 3.75 -	2003 test 2003 test Already Accounted For in Mold Making & Core Making Operations	99	95	11.7328	10.4757	0.0000	0.0000	0.0000	0.0000
Mold Sand Handling 3-04-003-50	860,400.00 (tons/year) sand			Emissions	already	accounted	for in the	Shakeout				0.0000
Molding Machine 3-04-003-98	9,400.00 (pounds/year) plastic	VOC	19.00 %	MSDS	0	0	0.0000	0.0000	0.0000	0.0000	98.6280	0.0000
	1,095.00 (gallons/year) release agent II	VOC	4.40 lb/gal	MSDS								
	81,400.00 (gallons/year) mold wash	VOC	0.17 lb/gal	MSDS								
Mold Dryer #1 1-03-006-03	0.0113 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0004	0.0004	0.0000	0.0050	0.0003	0.0042
Emission Factor = lb/mmCFT												

Appendix A - PTE After Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions After Controls					
							PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Mold Dryer #2 1-03-006-03	0.0303 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0010	0.0010	0.0001	0.0132	0.0007	0.0111
Emission Factor = lb/mmCFT												
Core Sand Handling 3-04-003-50	2,000.000 (tons/year) sand	PM PM10	3.60 0.54	AP-42 AP-42	0	0	3.6000	0.5400	0.0000	0.0000	0.0000	0.0000
Core Machine 3-04-003-70	5,000.00 (gallons/year) resin 4,000.00 (gallons/year) core wash	VOC VOC	1.13 lb/gal 4.40 lb/gal	MSDS MSDS	0	0	0.0000	0.0000	0.0000	0.0000	11.6250	0.0000
Shell Core Machine Butane Torch 1-03-010-01	0.36 (gallons/hour)	PM PM10 SOx NOx VOC CO	0.50 0.50 0.09 15.00 0.60 2.10	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0008	0.0008	0.0001	0.0237	0.0009	0.0033
Emission Factor = lb/1,000 gallons												
Pre-Finish Station 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	2.0951	5.5871	0.0000	0.0000	0.0000	0.0000
Shotblast Machine 3-04-003-40	93,900.00 (tons/year) metal	PM PM10	0.75 0.60	2003 test 2003 test	99	100	0.3521	0.2817	0.0000	0.0000	0.0000	0.0000
Core Removal Operation 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	2.0951	5.5871	0.0000	0.0000	0.0000	0.0000
Coarse Grinding Station #1 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	2.0951	5.5871	0.0000	0.0000	0.0000	0.0000
Coarse Grinding Station #2 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	Emissions Accounted for in Coarse Grinding Station #1					
Coarse Grinding Station #3 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	Emissions Accounted for in Coarse Grinding Station #1					
Coarse Grinding Station #4 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	Emissions Accounted for in Coarse Grinding Station #1					
Coarse Grinding Station #5 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	Emissions Accounted for in Coarse Grinding Station #1					
Filler/Putty Application 4-02-025-99	6,300.00 (gallons/year)	VOC	0.05 lb/gal	MSDS	99	95	0.0000	0.0000	0.0000	0.0000	0.1575	0.0000
Paint Booth #1 Grey Primer 4-02-006-10	16,000.00 (gallons/year) primer	VOC	3.00 lb/gal	MSDS	90		5.2800	5.2800	0.0000	0.0000	24.0000	0.0000
Primer is 60% solids		PM PM10	75.00 75.00	% Transfer Eff. % Transfer Eff.								
Paint Booth #1 Dryer	0.004125	PM	7.60	AP-42	0	0	0.0001	0.0001	0.0000	0.0018	0.0001	0.0015

Appendix A - - PTE After Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions After Controls					
							PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
1-03-006-03	(mmBTU/hr) natural gas	PM10 SOx NOx VOC CO	7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42								
Emission Factor = lb/mmcf												
Paint Booth #2 White Primer 4-02-006-10	70,000.00 (gallons/year) primer	VOC PM PM10	0.40 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		5.7750	5.7750	0.0000	0.0000	14.0000	0.0000
Primer is 70% solids												
Paint Booth #2 Dryer 1-03-006-03	0.004125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0001	0.0001	0.0000	0.0018	0.0001	0.0015
Emission Factor = lb/mmcf												
Buffing Booth 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.35 0.9500	2003 test 2003 test	99	95	0.9777	2.6538	0.0000	0.0000	0.0000	0.0000
Paint Booth #3 Yellow Primer 4-02-006-10	16,000.00 (gallons/year) primer	VOC PM PM10	3.00 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		1.3200	1.3200	0.0000	0.0000	24.0000	0.0000
Primer is 54% Solids												
Paint Booth #3 Dryer 1-03-006-03	0.004125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0001	0.0001	0.0000	0.0018	0.0001	0.0015
Emission Factor = lb/mmcf												
Putty Booth 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	2.0951	5.5871	0.0000	0.0000	0.0000	0.0000
Final Inspection Buffing Station 3-04-003-60	93,900.00 (tons/year) metal	PM PM10	0.75 2.0000	2003 test 2003 test	99	95	2.0951	5.5871	0.0000	0.0000	0.0000	0.0000
Final Inspection Paint Booth Yellow Primer 4-02-006-10	8,000.00 (gallons/year) primer	VOC PM PM10	3.00 lb/gal 75.00 75.00	MSDS % Transfer Eff. % Transfer Eff.	90		0.6600	0.6600	0.0000	0.0000	12.0000	0.0000
Primer is 54% Solids												
Emergency Generator 1 1-03-005-01	3.07 (gallons/hour) diesel #2	PM PM10 SOx NOx VOC CO	2.00 2.00 142.00 20.00 0.34 5.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0269	0.0269	1.9094	0.2689	0.0046	0.0672
Emission Factor = lb/1,000 gallons												
Emergency Generator 2 1-03-005-01	3.07 (gallons/hour) diesel #2	PM PM10 SOx NOx VOC	2.00 2.00 142.00 20.00 0.34	AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0269	0.0269	1.9094	0.2689	0.0046	0.0672

Appendix A - - PTE After Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions After Controls					
							PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Emission Factor = lb/1,000 gallons		CO	5.00	AP-42								
Air Makeup Unit 1 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 2 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 3 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 4 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 5 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 6 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Air Makeup Unit 7 1-03-006-03	5.28 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.1758	0.1758	0.0139	2.3126	0.1272	1.9426
Emission Factor = lb/mmcf												
Water Heater 1 1-03-006-03	0.199 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC	7.60 7.60 0.60 100.00 5.50	AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0066	0.0066	0.0005	0.0872	0.0048	0.0732

Appendix A - PTE After Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions After Controls					
							PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Emission Factor = lb/mmcf		CO	84.00	AP-42								
Water Heater 2 1-03-006-03	0.199 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0066	0.0066	0.0005	0.0872	0.0048	0.0732
Emission Factor = lb/mmcf												
Maintenance Parts Washing Station	37.500 (gallons/year)	VOC	0.392 (lb/gal)	MSDS	0	0	0.0000	0.0000	0.0000	0.0000	0.0074	0.0000
Natural Gas Heater 1 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 2 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 3 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 4 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 5 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 6 1-03-006-03	0.3 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104
Emission Factor = lb/mmcf												
Natural Gas Heater 7 1-03-006-03	0.3 (mmBTU/hr)	PM PM10	7.60 7.60	AP-42 AP-42	0	0	0.0100	0.0100	0.0008	0.1314	0.0072	0.1104

Appendix A - PTE After Control/Limits
North Vernon Industry Corporation
15 Tons/Hour Metal Expansion
SSM 079-17819-00018

Emission Unit	Maximum Capacity	Emission Factor	Emission Factor (lb/ton)	Source of Emission Factor	Control Efficiency %	Capture Efficiency %	Potential Emissions After Controls					
							PM (Tons/Year)	PM10 (Tons/Year)	SOx (Tons/Year)	NOx (Tons/Year)	VOC (Tons/Year)	CO (Tons/Year)
Emission Factor = lb/mmcf	natural gas	SOx NOx VOC CO	0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42								
Natural Gas Heater 8 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 9 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Natural Gas Heater 10 1-03-006-03	1.125 (mmBTU/hr) natural gas	PM PM10 SOx NOx VOC CO	7.60 7.60 0.60 100.00 5.50 84.00	AP-42 AP-42 AP-42 AP-42 AP-42 AP-42	0	0	0.0374	0.0374	0.0030	0.4928	0.0271	0.4139
Emission Factor = lb/mmcf												
Paved Roads	5,475 (miles/year)	PM PM10	0.2904 0.0567	AP-42 AP-42	0	0	0.795	0.1551	0.0000	0.0000	0.0000	0.0000
Total Potential Emissions After Controls (tons/year)							84.90	86.65	4.93	30.10	187.69	24.55
First Jump into PSD (tons/year)							100.00	100.00	100.00	100.00	100.00	100.00

NOTE:
15 tons of metal per hour = 131,400 tons of metal per year.

CALCULATION EXAMPLES:
Scrap & Charge Handling PM Emissions (Tons/Year) = (15.0 tons metal/hour)(0.60 pounds PM/ton metal)(8,760 hours/year)/(2,000 pounds/ton) = 39.42 tons PM/year
Ladle Preheater PM Emissions (Tons/Year) = (0.40 mmBTU/hr)(1 mmBTU/1,000 mmCFT)(1.90 pounds PM/mmCFT)(8,760 hours/year)/(2,000 pounds/ton) = 0.0033 tons PM/year
Rotary Kiln Dryer PM Emissions (Tons/Year) = (3,000 acfm)(0.01 grains PM/acfm)(1 pounds/7,000 grains)(60 minutes/hour)(8,760 hours/year)/(2,000 pounds/ton) = 1.1263 tons PM/year
Rotary Kiln Dryer VOC Emissions (Tons/Year) = (4.50 tons scrap/hour)(0.002 coolant)(0.0534 VOC rate)(8,760 hours/year) = 4.2123 tons VOC/year
Paint Booth #1 PM Emissions (Tons/Year) = (0.09 gallons primer/hour)(0.6 solids rate)(1-0.75 transfer rate)(11.0 pounds/gallon density)(8,760 hours/year)/(2,000 pounds/ton)(1-0.9) = 2.6017 tons PM/year

NVIC
HAP Derivation

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Scrap and Charge	0.6	chromium	0.038%	0.00023	Speciate
Handling		cobalt	0.003%	0.00002	Speciate
SCC# 3-04-003-15		nickel	0.067%	0.00040	Speciate
AP-42 Ch. 12.10		arsenic	0.013%	0.00008	Speciate
		cadmium	0.006%	0.00004	Speciate
		selenium	0.001%	0.00001	Speciate
		manganese	0.600%	0.00360	MSDS
		antimony	0.185%	0.00111	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Melting - Electric	0.90	chromium	0.038%	0.00023	Speciate
Induction Furnaces		cobalt	0.003%	0.00002	Speciate
		nickel	0.067%	0.00040	Speciate
		arsenic	0.013%	0.00008	Speciate
EPA SCC# 3-04-003-03		cadmium	0.006%	0.00004	Speciate
AP-42 Ch. 12.10		selenium	0.001%	0.00001	Speciate
		manganese	0.600%	0.00360	MSDS
		antimony	0.185%	0.00111	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
	0	chromium	0.038%	0.00000	Speciate
Pouring/Cooling		cobalt	0.003%	0.00000	Speciate
SCC# 3-04-003-18		nickel	0.067%	0.00000	Speciate
		arsenic	0.013%	0.00000	Speciate
**Vacuum Process Controls PM/PM10		cadmium	0.006%	0.00000	Speciate
Emissions**		selenium	0.001%	0.00000	Speciate
		manganese	0.600%	0.00000	MSDS
		antimony	0.185%	0.00000	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
	3.2	chromium	0.038%	0.00122	Speciate
Castings Shakeout		cobalt	0.003%	0.00010	Speciate
SCC# 3-04-003-31		nickel	0.067%	0.00214	Speciate
AP-42 Ch. 12.10		arsenic	0.013%	0.00042	Speciate
		cadmium	0.006%	0.00019	Speciate
		selenium	0.001%	0.00003	Speciate
		manganese	0.600%	0.01920	MSDS
		antimony	0.185%	0.00592	Speciate

NVIC
HAP Derivation

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Casting Cleaning and Finishing SCC# 3-04-003-40 AP-42 Ch. 12.10	17	chromium	0.038%	0.00646	Speciate
		cobalt	0.003%	0.00051	Speciate
		nickel	0.067%	0.01139	Speciate
		arsenic	0.013%	0.00221	Speciate
		cadmium	0.006%	0.00102	Speciate
		selenium	0.001%	0.00017	Speciate
		manganese	0.600%	0.10200	MSDS
		antimony	0.185%	0.03145	Speciate

Process:	Pollutant	Ef (lb/MMcf produced)	Source
Natural Gas Units SCC#1-02-006-03	benzene	0.00210	AP-42
	dichlorobenzene	0.00120	AP-42
	formaldehyde	0.07500	AP-42
	hexane	1.80000	AP-42
	toluene	0.00340	AP-42
	lead	0.0005	AP-42
	cadmium	0.0011	AP-42
	chromium	0.0014	AP-42
	manganese	0.00038	AP-42
	nickel	0.0021	AP-42

NVIC
HAP Derivation

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Scrap and Charge	0.6	chromium	0.038%	0.00023	Speciate
Handling		cobalt	0.003%	0.00002	Speciate
SCC# 3-04-003-15		nickel	0.067%	0.00040	Speciate
AP-42 Ch. 12.10		arsenic	0.013%	0.00008	Speciate
		cadmium	0.006%	0.00004	Speciate
		selenium	0.001%	0.00001	Speciate
		manganese	0.600%	0.00360	MSDS
		antimony	0.185%	0.00111	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Melting - Electric	0.90	chromium	0.038%	0.00023	Speciate
Induction Furnaces		cobalt	0.003%	0.00002	Speciate
		nickel	0.067%	0.00040	Speciate
		arsenic	0.013%	0.00008	Speciate
EPA SCC# 3-04-003-03		cadmium	0.006%	0.00004	Speciate
AP-42 Ch. 12.10		selenium	0.001%	0.00001	Speciate
		manganese	0.600%	0.00360	MSDS
		antimony	0.185%	0.00111	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
	0	chromium	0.038%	0.00000	Speciate
Pouring/Cooling		cobalt	0.003%	0.00000	Speciate
SCC# 3-04-003-18		nickel	0.067%	0.00000	Speciate
		arsenic	0.013%	0.00000	Speciate
**Vacuum Process Controls PM/PM10		cadmium	0.006%	0.00000	Speciate
Emissions**		selenium	0.001%	0.00000	Speciate
		manganese	0.600%	0.00000	MSDS
		antimony	0.185%	0.00000	Speciate

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
	3.2	chromium	0.038%	0.00122	Speciate
Castings Shakeout		cobalt	0.003%	0.00010	Speciate
SCC# 3-04-003-31		nickel	0.067%	0.00214	Speciate
AP-42 Ch. 12.10		arsenic	0.013%	0.00042	Speciate
		cadmium	0.006%	0.00019	Speciate
		selenium	0.001%	0.00003	Speciate
		manganese	0.600%	0.01920	MSDS
		antimony	0.185%	0.00592	Speciate

NVIC
HAP Derivation

Process:	Ef PM (lb/ton produced)	Pollutant	Speciate % 0-30	Ef (lb/ton produced)	Source
Casting Cleaning and Finishing SCC# 3-04-003-40 AP-42 Ch. 12.10	17	chromium	0.038%	0.00646	Speciate
		cobalt	0.003%	0.00051	Speciate
		nickel	0.067%	0.01139	Speciate
		arsenic	0.013%	0.00221	Speciate
		cadmium	0.006%	0.00102	Speciate
		selenium	0.001%	0.00017	Speciate
		manganese	0.600%	0.10200	MSDS
		antimony	0.185%	0.03145	Speciate

Process:	Pollutant	Ef (lb/MMcf produced)	Source
Natural Gas Units SCC#1-02-006-03	benzene	0.00210	AP-42
	dichlorobenzene	0.00120	AP-42
	formaldehyde	0.07500	AP-42
	hexane	1.80000	AP-42
	toluene	0.00340	AP-42
	lead	0.0005	AP-42
	cadmium	0.0011	AP-42
	chromium	0.0014	AP-42
	manganese	0.00038	AP-42
	nickel	0.0021	AP-42

NVIC
HAP Calculations

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Scrap and Charge	93,900.00	chromium	0.00023	0.01	0.01	baghouse	0.00%
Handling		cobalt	0.00002	0.00	0.00		
SCC# 3-04-003-15		nickel	0.00040	0.02	0.02		
AP-42 Ch. 12.10		arsenic	0.00008	0.00	0.00		
		cadmium	0.00004	0.00	0.00		
		selenium	0.00001	0.00	0.00		
		manganese	0.00360	0.17	0.17		
		antimony	0.00111	0.05	0.05		

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Melting - Electric	93,900.00	chromium	0.00023	0.01	0.00	baghouse	74.25%
Induction Furnaces		cobalt	0.00002	0.00	0.00		
EPA SCC# 3-04-003-03		nickel	0.00040	0.02	0.00		
AP-42 Ch. 12.10		arsenic	0.00008	0.00	0.00		
		cadmium	0.00004	0.00	0.00		
		selenium	0.00001	0.00	0.00		
		manganese	0.00360	0.17	0.04		
		antimony	0.00111	0.05	0.01		

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Pouring/Cooling	93,900.00	chromium	0.00000	0.00	0.00	Vacuum Process	100.0%
SCC# 3-04-003-18		cobalt	0.00000	0.00	0.00		
		nickel	0.00000	0.00	0.00		
**Vacuum Process Controls PM/PM10		arsenic	0.00000	0.00	0.00		
Emissions**		cadmium	0.00000	0.00	0.00		
		selenium	0.00000	0.00	0.00		
		manganese	0.00000	0.00	0.00		
		antimony	0.00000	0.00	0.00		

NVIC
HAP Calculations

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Shakeout SCC# 3-04-003-31 AP-42 Ch. 12.10	93,900.00	chromium	0.00122	0.06	0.00	baghouse	94.05%
		cobalt	0.00010	0.00	0.00		
		nickel	0.00214	0.10	0.01		
		arsenic	0.00042	0.02	0.00		
		cadmium	0.00019	0.01	0.00		
		selenium	0.00003	0.00	0.00		
		manganese	0.01920	0.90	0.05		
		antimony	0.00592	0.28	0.02		

Process:	Annual Capacity (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Cleaning and Finishing SCC# 3-04-003-40 AP-42 Ch. 12.10	93,900.00	chromium	0.00646	0.30	0.00	baghouse	99.0%
		cobalt	0.00051	0.02	0.00		
		nickel	0.01139	0.53	0.01		
		arsenic	0.00221	0.10	0.00		
		cadmium	0.00102	0.05	0.00		
		selenium	0.00017	0.01	0.00		
		manganese	0.10200	4.79	0.05		
		antimony	0.03145	1.48	0.01		

Process:	Maximum Hourly Capacity (mmBTU/hour)	Pollutant	Ef (lb/mmcf produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Natural Gas Units SCC#1-02-006-03	66.36	benzene	0.00210	0.00	0.00	None	0.00
		dichlorobenzene	0.00120	0.00	0.00		
		formaldehyde	0.07500	0.02	0.02		
		hexane	1.80000	0.52	0.52		
		toluene	0.00340	0.00	0.00		
		lead	0.00050	0.00	0.00		
		cadmium	0.00110	0.00	0.00		
		chromium	0.00140	0.00	0.00		
		manganese	0.00038	0.00	0.00		
		nickel	0.00210	0.00	0.00		

NVIC
HAP Calculations

Process:	Annual Capacity (gallons resin/year)	Pollutant	Ef (lb/gallon used)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Core Making	5,000.00	Phenol	0.01130	2.83E-02	0.03	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Fill/Putty Application	6,300.00	Styrene	0.05000	1.58E-01	0.16	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Primer #1	16,000.00	Styrene	0.25200	2.02E+00	2.72	None
		Xylene	0.06300	5.04E-01		
		Ethylbenzene	0.02520	2.02E-01		

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Primer #2	70,000.00	Styrene	0.11000	3.85E+00	3.85	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Primer #3	16,000.00	Glycol Ether	0.45000	3.60E+00	3.60	None

Process:	Annual Capacity (gallons material/year)	Pollutant	Ef (lb/gal produced)	Ebc (ton/yr)	Total HAP (ton/yr)	Type of control
Final Inspection Paint	8,000.00	Glycol Ether	0.45000	1.80E+00	1.80	None

NVIC
HAP Calculations

Total Potential Emissions Before Controls

cadmium	0.06	tons/year
chromium	0.38	tons/year
cobalt	0.03	tons/year
nickel	0.67	tons/year
arsenic	0.13	tons/year
selenium	0.01	tons/year
lead	0.00	tons/year
manganese	6.03	tons/year
antimony	1.86	tons/year
benzene	0.00	tons/year
dichlorobenzene	0.00	tons/year
ethylbenzene	0.20	tons/year
formaldehyde	0.02	tons/year
glycol ether	5.40	tons/year
hexane	0.52	tons/year
phenol	0.03	tons/year
styrene	6.02	tons/year
toluene	0.00	tons/year
xylene	0.50	tons/year
Total	21.88	tons/year

Total Potential Emissions After Controls

cadmium	0.00	tons/year
chromium	0.02	tons/year
cobalt	0.00	tons/year
nickel	0.04	tons/year
arsenic	0.01	tons/year
selenium	0.00	tons/year
lead	0.00	tons/year
manganese	0.31	tons/year
antimony	0.10	tons/year
benzene	0.00	tons/year
dichlorobenzene	0.00	tons/year
ethylbenzene	0.20	tons/year
formaldehyde	0.02	tons/year
glycol ether	5.40	tons/year
hexane	0.52	tons/year
phenol	0.03	tons/year
styrene	6.02	tons/year
toluene	0.00	tons/year
xylene	0.50	tons/year
Total	13.18	tons/year

Methodology:

Ef = Emission factor

Ebc = Potential Emissions before controls = Rate (units/hr) x Ef(lbs/unit) x 8760 hrs/yr / 2000 lbs/hr

Eac = Potential Emissions after controls = (1-efficiency/100) x Ebc

1 lb = 2000 tons

Paved Road Fugitive Emissions

$$E = k (sL/2)^{0.65} (W/3)^{1.5}$$

AP-42 Chapter 13.2.1.3 equation (1)

Where:

E = particulate emission factor

k = particulate size multiplier (lb/VMT)

sL = road surface silt loading (g/m²)

W = average weight (tons) of all vehicles traveling on road

VMT = vehicle miles traveled

k =	0.082 lb PM/VMT	AP-42 Chapter 13.2.1.3(Table 13.2-1.1)
	0.016 lb PM10/VMT	AP-42 Chapter 13.2.1.3(Table 13.2-1.1)

sL =	0.400 g/m ² PM	AP-42 Chapter 13.2.1.3(Table 13.2-1-2)
	0.400 g/m ² PM10	AP-42 Chapter 13.2.1.3(Table 13.2-1-2)

W =	14.00 tons	Calculated From Table Below
W = SUM((Weight of Vehicle Full * Number of Vehicles per day))/(Total Number of Vehicles per day)		

PM Emission Factor = $(k)(sL/2)^{0.65} (W/3)^{1.5}$
 PM Emission Factor = 0.290 lb PM/VMT

PM10 Emission Factor = $(k)(sL/2)^{0.65} (W/3)^{1.5}$
 PM10 Emission Factor = 0.057 lb PM10/VMT

Type of Vehicle	Weight of Vehicle Empty (tons)	Weight of Vehicle Full (tons)	Number of Vehicles (per day)	Miles Traveled (per year)	PM Emissions (tons/year)	PM10 Emissions (tons/year)
Fork Lift Trucks	2	3	10	3,650	0.530	0.103
Semi Trucks	15	25	10	1,825	0.265	0.052
Total =					0.795	0.155

Note:

Fork Lift Trucks Miles Traveled = 1 mile per day * 365 days per year * 10 vehicles per day = 3,650 miles per year

Semi Trucks Miles Traveled = 0.5 mile per day * 365 days per year * 10 vehicles per day = 1,850 miles per year